

# American Perfumer AND AROMATICS



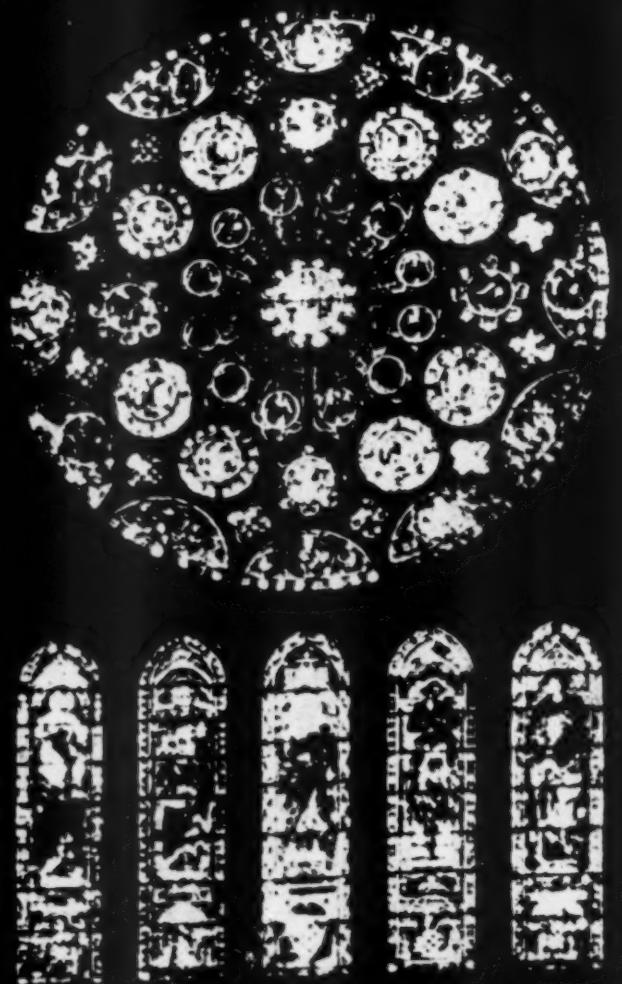
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DECEMBER 1958

THE MAGAZINE OF TASTE AND SCENT



Collapsible Tubes . . . page 31 • Polyethylene Bottles . . . page 45

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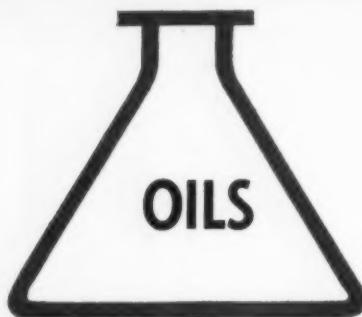
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# American Perfumer AND AROMATICS

VOL. 72, NO. 6

DECEMBER 1958

## Contents

### RESEARCH

The Irrepressible Collapsible Metal Tube ..... George A. Stauffer 31  
*Invention of the tube and its amazing development*

### PRODUCTION

Lined Polyethylene Bottles ..... J. H. Parlman 45  
*Latest developments widening its use in packaging*

### MANAGEMENT

Annual Convention of Society of Cosmetic Chemists ..... 52  
*Growth and influence of S. C. C.—Abstracts of papers*  
 Cosmetic Seminar in Bonn, Germany ..... M. G. deNavarre 60  
*Features of second S. C. C. European Tour*

### DEPARTMENTS

News ..... 9, 69	Packaging and Promotion ... 49
Desiderata ..... 15	Aeroscripts ..... 27
Questions and Answers ..... 18	New Products and Ideas ..... 58
Technical Abstracts ..... 44	Market Reports ..... 81
	Index to Advertisers ..... 84

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 glass from inside Chartres  
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December, 1958

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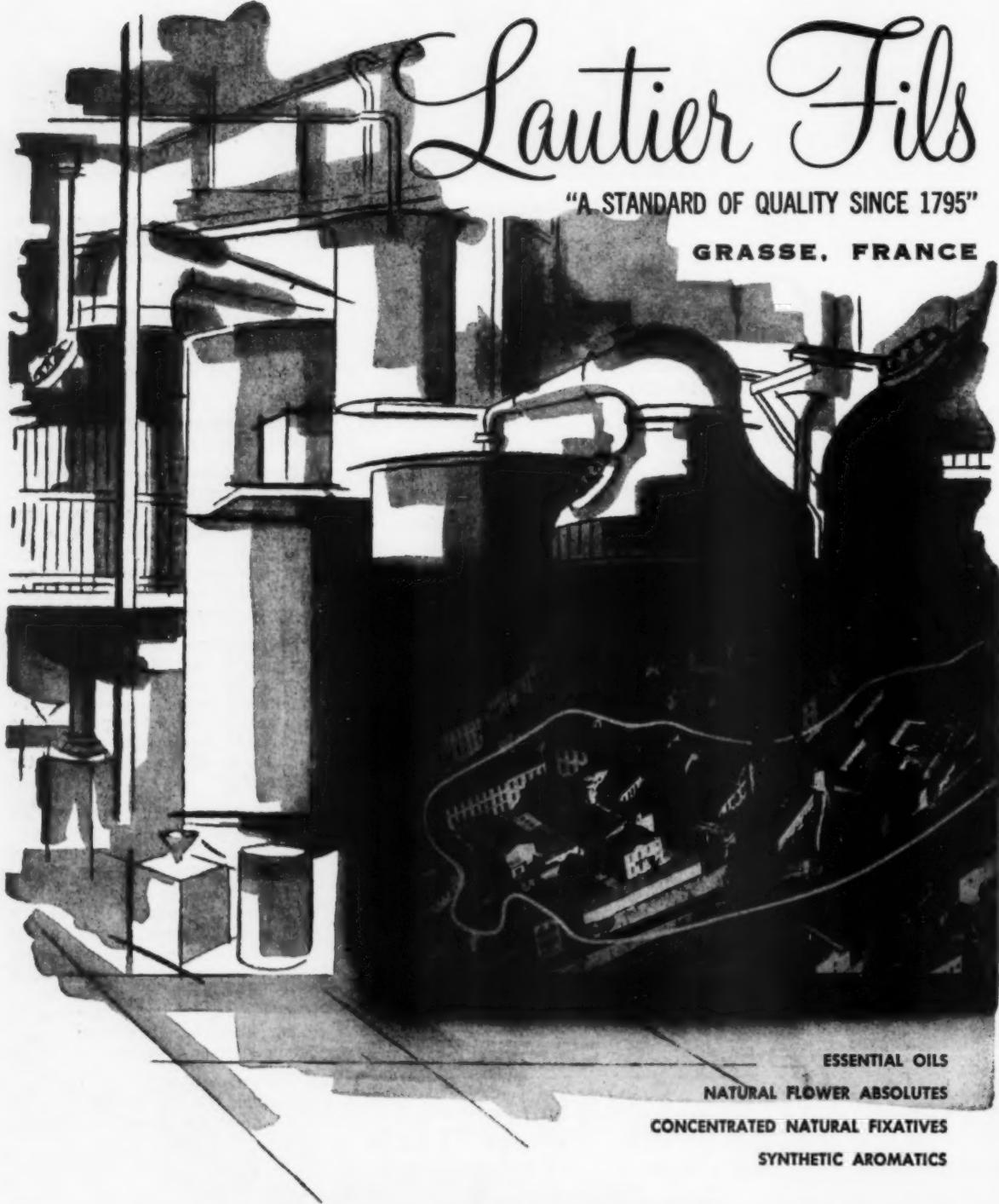
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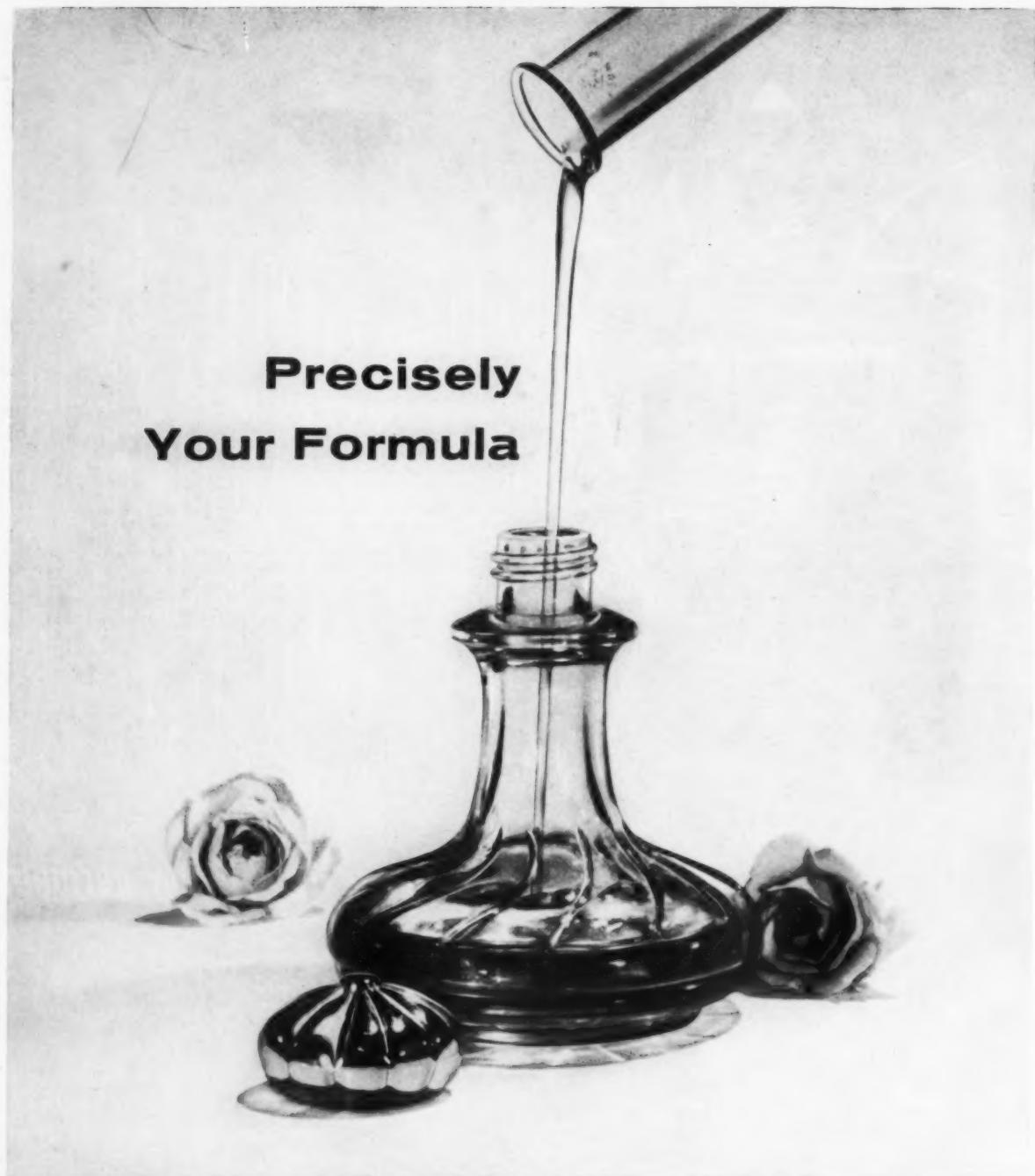
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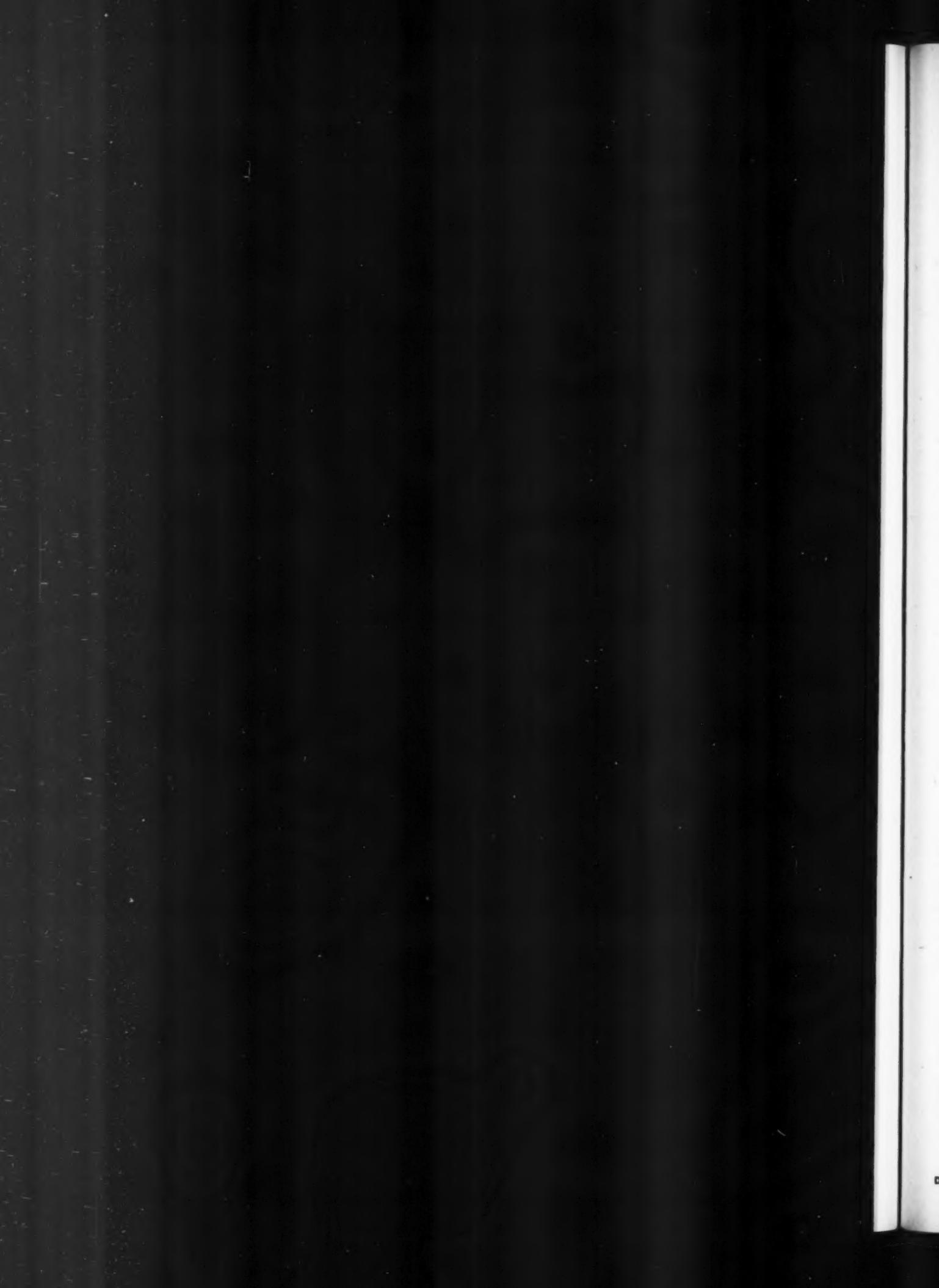
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## MINUTE NEWS . . .

### Buyer for 80 Years Honors Salesman, 94, who Sold to It

Jacob Manheimer who will be 95 years old in a few months was honored by the Mennen Co., Morristown, N. J. for his continuous record of selling perfume to the company for 80 years. This took place during the celebration marking the opening of the company's attractive new plant addition, November 19. The occasion was called to commemorate the fiftieth year of service to the company of President William G. Mennen, son of the founder. As a tribute to Mr. Manheimer he was invited to unveil a plaque for Mr. Mennen. In the unavoidable absence of the president, the plaque was presented to the third generation of the Mennen family, George Mennen, vice president in charge of manufacturing and William G. Mennen Jr. executive vice president in charge of marketing. The plaque was the gift of the Mennen Peddlers' Association, an informal organization of salesmen who call on the Mennen Co. Mr. Manheimer is dean of the association. The Mennen peddler tradition was originated in the early thirties by William G. Mennen. His idea was to cultivate the friendship of various manufacturers sales representatives serving the company as a means of enabling the company and the salesmen to meet on a friendlier basis. So the Mennen Peddler party which meets annually, was instituted. The peddlers' association presented an oil portrait of Mr. Mennen on the anniversary of his thirtieth year as president just as it presented a plaque to him on his fiftieth anniversary as president. The enlightened management of the company has definitely brought results: good will radiates from the management throughout the entire organization. Its products are sold in 75 countries and are manufactured in 21 countries outside the United States through wholly owned subsidiaries and licensees. It markets three baby products, 12 men's products and it has some women's products in test markets; and there are other products in the development stage.

### Revlon Inc. Purchases Control of Schick Electric Razor

Revlon, Inc., New York City, which recently acquired Thayer Laboratories and the Knomark Mfg. Co. in its diversification program has purchased the stock of the Schick family and Kenneth Gifford in Schick Inc. manufacturers of electric razors. Charles Revson, founder of Revlon Inc., Charles Lackman, Harry Meresman and William Mewhort, Revlon directors have been elected to the Schick board of seven.

### Royal Jelly and Other Claims Under Scrutiny by F. D. A.

Arthur Flemming, secretary of Health, Education and Welfare has stated that he will give his personal support to the government's campaign against quackery in the cosmetic, food and drug industries. His department supervises the operation of the Food & Drug Administration. To give an idea of the kind of product he has in mind Mr. Flemming cited several seizures based on the use of royal jelly which has been promoted as a rejuvenating ingredient in food and otherwise. The Food & Drug Administration contends that the label must cover all of the claims expounded in advertising and if not it is not properly labeled. The Post Office department has issued a number of fraud complaints and orders to stop mailing several royal jelly products. "For bees," Mr. Flemming stated, "royal jelly is a miracle food but it has no practical value for humans as a food, drug or cosmetic." Among the several royal jelly products seized by the F. D. A. under court orders and destroyed were Beauty for Life capsules, a vitamin with royal jelly and gelatin shipped by Helena Rubinstein, Inc. which the F. D. A. charged was misrepresented as a product useful for beauty and nerves. Helena Rubinstein Inc. reports that it did not make such claims and that it has relabeled the product to be sold under the name of Pink capsules.

**Dr. Schultz Forms Company to Sell Direct to Consumers**

Imperial Beauty Research is the name of a new company organized by Dr. Joseph Schultz which will manufacture a new cosmetic line that will be distributed direct to consumers by Salespower Inc. of Chicago, of which Aaron Scheinfeld is president. As over 30% of the cosmetics now sold in the United States are sold by house-to-house distributors, Salespower Inc. plans to have a sales force of about 5,000 by April 1959 to meet the expected demand across the country for the new cosmetic line which will be heavily advertised in women's magazines. A consulting service to give customers well considered advice on the proper use of cosmetics is planned under the direction of Miss Rita O'Grady formerly of the psychology department of Northwestern University who is head of the Imperial Beauty Division of Salespower Inc. Dr. Joseph Schultz is well known in the cosmetic industry as the former president of Lady Esther Inc., and of Lanolin Plus Inc. and prior to that with Revlon Inc. and the Public Health Service. It is reported that 26 items will be in the new line of cosmetics.

**Authority of Government to Fix Food Color Tolerances**

The authority of the Secretary of Health, Education and Welfare to establish tolerances for coaltar colors used in foods is being considered by the United States Supreme Court. Arguments have already been heard. The government appealed from a decision of the Fifth Circuit Court of Appeals. That decision held that the food, drug and cosmetic law gave the secretary authority to establish tolerances. The government maintains that no such authority exists in the law.

**Purex Corp. Buys Puhl to Get National Distribution**

Feeling that national distribution is essential in the household cleaning agents field as it is only then that selling and local and regional advertising can be supported by national advertising, Purex Corp., South Gate, Calif. has purchased John Puhl Products Co., Chicago. Both manufacture household cleaning agents but with plants and distribution in different parts of the country. Puhl will be operated as a division and its president, before the sale, has been elected an executive vice president of Purex Corp. Puhl makes Little Bo-Peep household ammonia, Little Boy Blue bluing and Fleecy White Laundry Bleach. Among the products made by the Purex Corp. are Trend liquid and dry detergents, Sweetheart soap, deodorant soaps, Blu-White Instant Dissolving Suds, and New Blue Dutch Cleanser.

**New Medicated Beauty Lotion by Noxema Chemical Co.**

A new medicated beauty lotion named Noxema Skin Lotion, which is reported to be the result of eight years of research and testing, is to be launched in January by the Noxema Chemical Co., Baltimore, Md. According to the company rigidly controlled clinical tests have demonstrated that it has the capacity to solve the major skin problems faced by women of all ages.

**Electric Shaver Makers Get Orders from F. T. C.**

Three large manufacturers of electric shavers have been ordered by the Federal Trade Commission to stop discrimination in prices and promotional allowances in the sale of their shavers. The companies are Sperry-Rand Corp., North American Philips Co. and Schick Inc. (now controlled by Revlon Inc.). Schick and North American have been ordered to furnish demonstrators on proportionally equal terms to their customers. Schick and Sperry-Rand have been ordered to stop fixing prices at which their shavers are resold by wholesalers and retailers in competition with outlets controlled by them. Schick was also ordered to stop using misleading free claims. The various companies consented to the orders and so were not admissions that they had violated the law.

**Naarden of Holland Opens New Works in Argentina**

Naarden Argentina's new works in Buenos Aires, Argentina, S. A. was opened November 27 by D. W. A. van Dorp head of the parent company, N. V. Chemische Fabriek Naarden of the Netherlands. The Argentine Minister of Industry, the Dutch ambassador and several hundreds of leading bankers and industrialists attended the ceremonies. The Naarden subsidiary in Argentina was founded in 1946 and has since been under the direction of J. Harms. The new works house offices, laboratories and production plants for perfume compounds, flavors etc. Argentina buys 150 million guilders of Dutch goods and services annually and Holland spends about 250 million in return.





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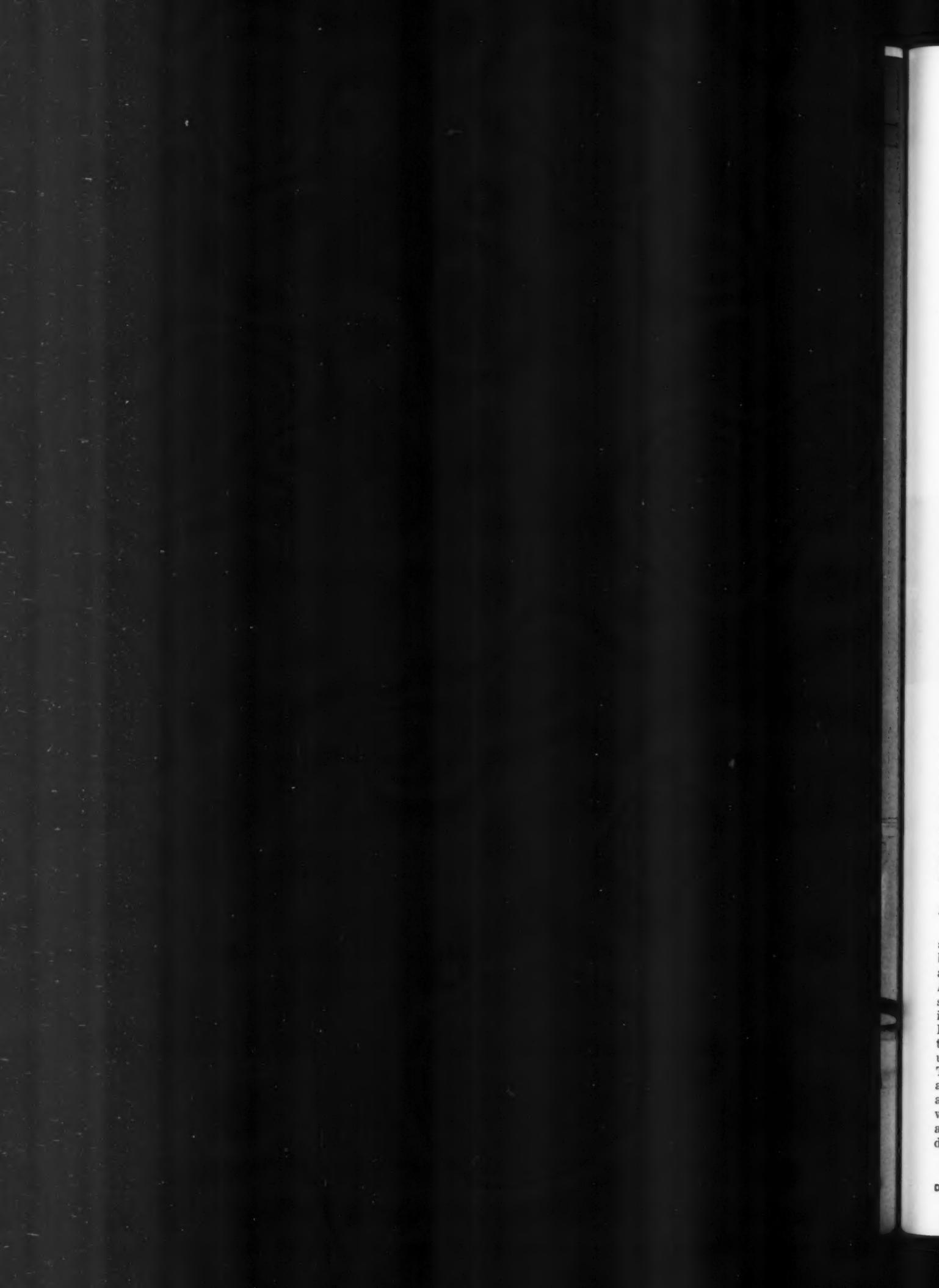
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# DESIDERATA

Maison G. deNavarre, M.S., F.A.I.C.

## SKIN EXTRACTS

Some of the European literature refers to skin extracts as useful ingredients of cosmetics. However, the literature is very vague as to how to make a skin extract.

British Patent No. 365,004 (1932), describes a procedure of using the skin of warm-blooded animals and extracting with a lipid solvent. As an example, the skin is removed from freshly killed young pig as soon as possible after death, the subcutaneous tissue and fat are removed, the skin quickly extracted with ether, the ether is evaporated, the extract treated with 0.2 per cent sodium carbonate anhydrous along with a preservative. This is incorporated into a cosmetic product. The residue may also be simply absorbed into an ointment base and this worked up into a cosmetic.

Skin extracts of this type have a toning action on blood vessels, preventing lines and wrinkles and giving the skin new tone, the patent states.

## AMINO ACID COMPLEXES

The metals, iron, zinc, magnesium, copper and manganese have been complexed with a variety of amino acids by Yamagata (*Hakko Kogaku Zasshi*, 36, 71, 1958) to study their effect on the variation in the mold *Aspergillus oryzae*. However, not all the amino acids tested complexed with the metals under the conditions of the tests. Thus, magnesium complexed with all the amino acids but taurine and arginine. Manganese reacted only with three, phenylalanine, aspartic acid and asparagine. Iron and zinc did not complex.

This tendency to form complexes

with amino acids can produce materials of considerable importance to cosmetics.

## SUPERFATTED POWDER

Some in the industry will remember the face powders of a generation ago, made with olive and other oils. Literature of the industry says that the use of oil in face powder proves the formula is not properly balanced. However, the addition of an oil such as one of the newer synthetic esters, or for that matter, even mineral oil, does intensify the color thereby enabling the formulator to use less coloring. A bonus from this is the fact the powders do not yellow as much when applied to the skin. However this intensification of coloring is not sudden. It takes a few days to have the oil spread throughout the mass.

## OLEYL ALCOHOL "FEEL"

There is no doubt that oleyl alcohol gives fatty cosmetics a certain feeling difficult to get from other materials. However, good odor free oleyl alcohol is difficult to find at a decent price. A German product which is an oleic ester of liquid fatty alcohols quite nearly approaches the feeling wanted. It is priced under a dollar a pound too. It is almost odorfree and can replace oleyl alcohol in many formulas. It has a good dermatological history behind it too.

## SILICONE LOTION

Silicones are not easy to emulsify, possessing certain anti-emulsifying properties basic to the silicone itself. However, emulsions can be made. Thus if you melt together to a temperature of 70°C,

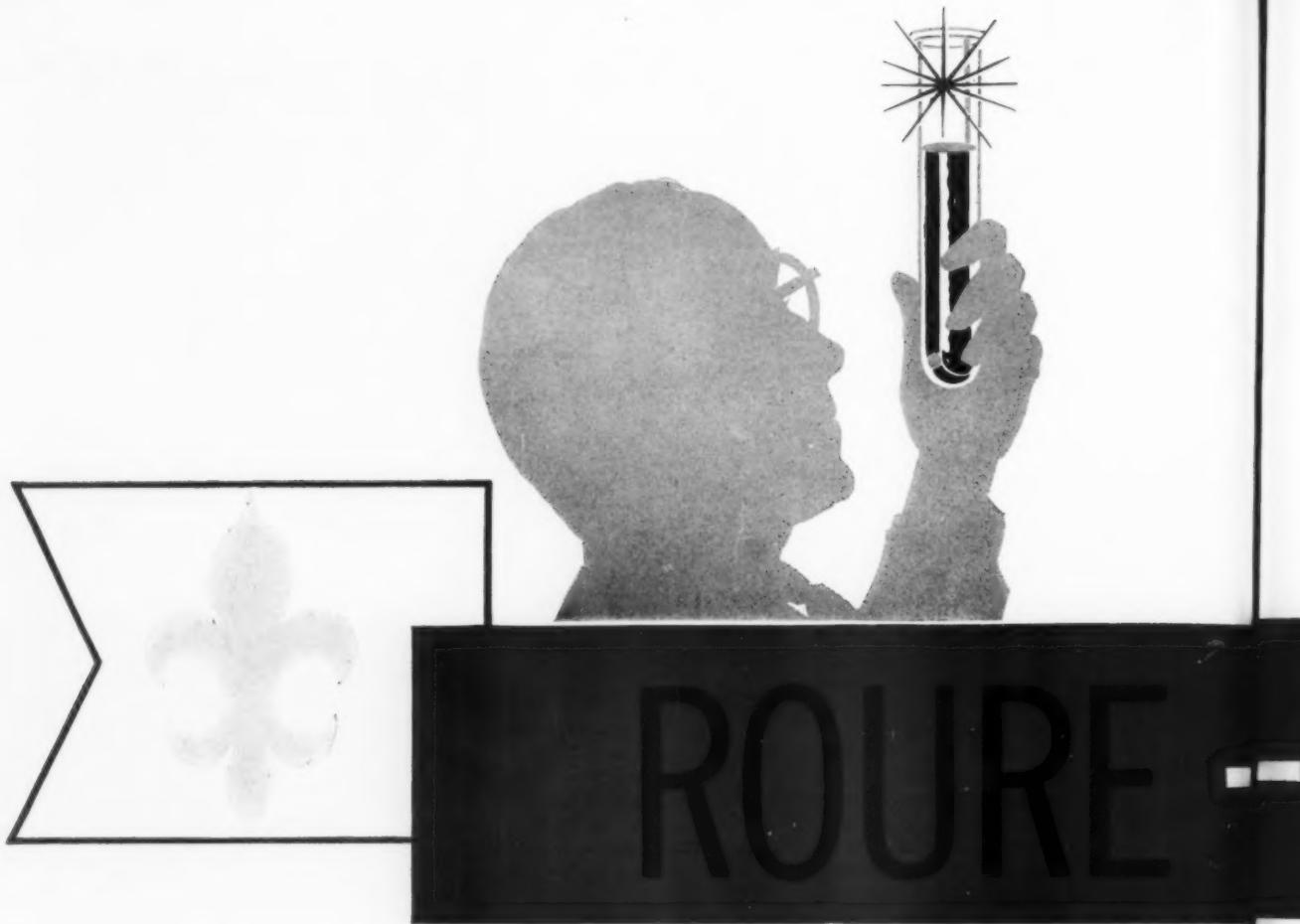
isopropyl palmitate or myristate 3.3 parts, glycerin 2.2 parts, triple pressed stearic acid 1 part, silicone fluid 2 or more parts, along with 3.25 parts of a specialty emulsifier, you can dilute this with enough water at 70°C to make 100 parts, along with perfume and coloring. Don't overlook using preservative equivalent to at least 0.15 percent of methyl parahydroxybenzoate, keeping in mind that some preservatives are inactivated by non-ionic emulsifiers. The product formed above is thick and gel-like for a few days, then thins out to the desired consistency.

## NOTES

It has often been thought that germs (microorganisms) could not utilize hydrocarbons such as paraffin as a carbon source in their metabolism. However, Hirabayashi (C.A. 52, 18649, 1958) finds that *Verticillium*, *Oospora*, *Aspergillus*, *Penicillium* and *Endomyces* can use 20-42 per cent of the hydrocarbon in the course of a two-month incubation.

... And while on the subject of bugs, a darn good article on the use of antibiotics as preservatives appears in *Applied Microbiology*, 6, 268, 1958, which includes a discussion of other materials, too. . . . Countercurrent extraction is used in U. S. Patent No. 2,839,544 for separating stigmasterol from commercial phytosterol mixtures using a Heptane-ethylenedichloride solvent. . . . A couple of newly imported suppository bases show promise as lipstick bases, particularly since they can absorb water and water soluble materials. . . . Goat tallow is supposed to have a particularly favorable unsaturated lipid ratio (C. A. 52, 19182, 1958)





## WORLD-WIDE RESOURCES WORLD-WIDE SERVICES

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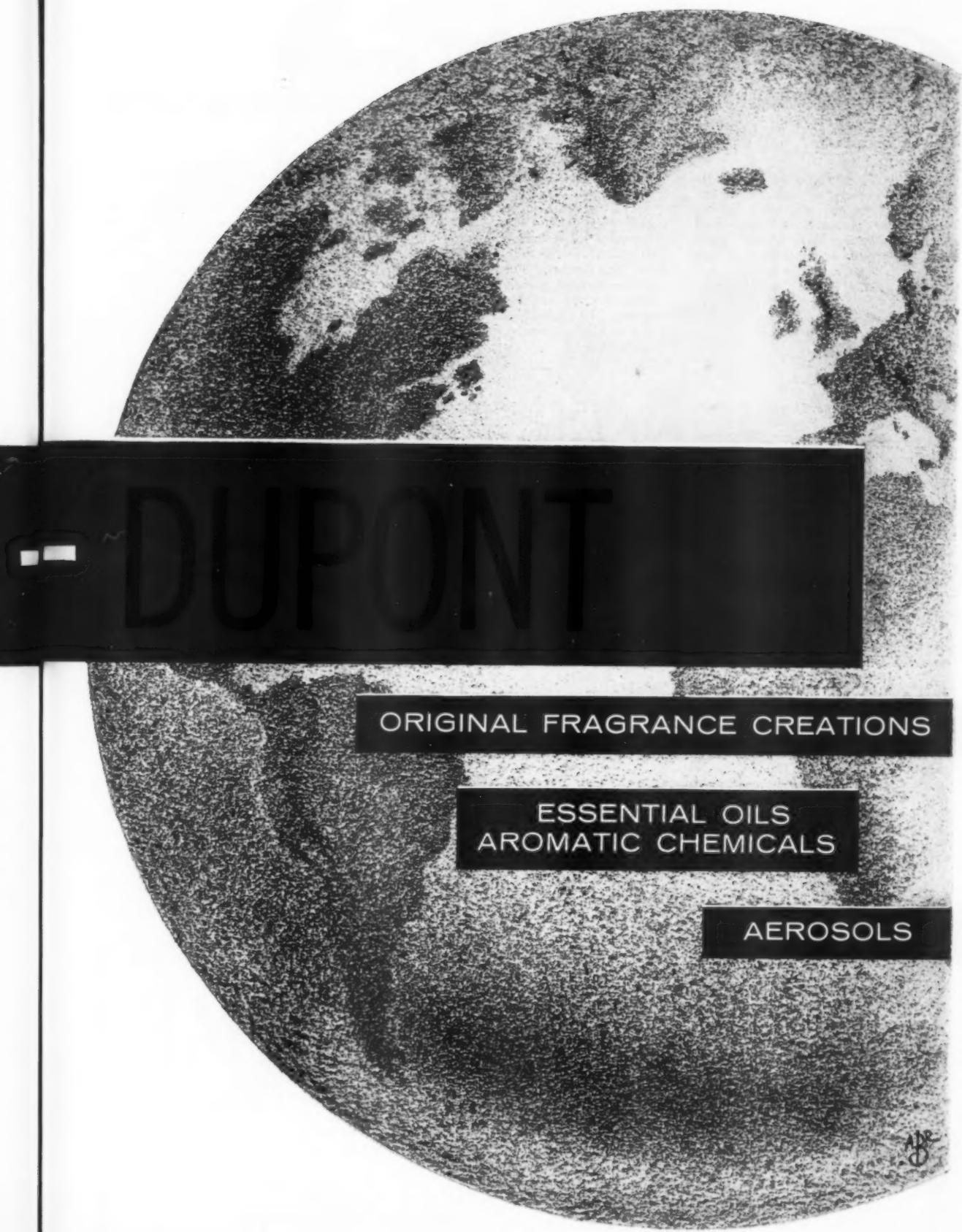
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## QUESTIONS &



## ANSWERS

### 1311: ANTIPERSPIRANTS

**Q.** Will you please give us some antiperspirant formulas in both cream and liquid that are not too harsh on the clothing and the skin. We have tried some formulas that have proved unsuccessful. We wish a simple formula that will restrict the perspiration as some now on the market. J. A. G., Tenn.

**A.** We suggest that you write to Reheis Company, Berkeley Heights, New Jersey, for data on their Chlorhydrol and to Waverly Chemical Company, Inc., Mamaroneck, N. Y., and ask them for their product bulletin on Astrigen. Both these products are buffered aluminum chlorhydroxide complex and suggest a group of various types of formulas for antiperspirant preparations. One of these should meet your requirements. Also write to the Atlas Powder Company, Wilmington 99, Delaware, and ask for their Cosmetic Bulletin on formulating with Arlacel 165. In this bulletin you will find a number of useful formulas using their particular stabilized glycerol monostearate along with aluminum chlorhydroxide complex which has been stabilized for safety. The Goldschmidt Chemical Corp., 153 Waverly Place, New York 14, New York, have a bulletin on Tegacid which lists a number of formulas for antiperspirants.

### 1312: SOURCES

**Q.** In the June issue of your magazine you refer in your "Desiderata" column to a hair lacquer spray Base 325 concentrated, a tinted alkyl aryl sulfate and also a silicone lotion by Walter Taylor. Please inform us of the sources of supply of these three different items. We will also appreciate a suggested formulation for an instant neutralizer emulsifier. S. B. C., Calif.

**A.** Base 325 is supplied by Ciba Company, Inc., 627 Greenwich Street, New York 14, New York. The tinted alkyl aryl sulfate is supplied by Ralph Kaye and Associates, 1375 Cavell Avenue, Highland Park, Illinois, and Neocol is the emulsifier for making a silicone lotion from The Disperser Company, Box 55, Guilford, Connecticut. An instant neutralizer can be made from the following formula:

Sodium Bromate	16 gm.
Ethoxylated Cetyl Alcohol	6 gm.
Cholesterol	0.5 gm.
H <sub>2</sub> O q.s.	100 gm.

### 1313: PLACENTINE

**Q.** In the March, 1958 issue of AMERICAN PERFUMER AND AROMATICS under "Last Minute News," I noticed a reference to a product known as "placentine, a highly concentrated placenta extract." Is it possible to obtain this in the United States? I would appreciate knowing the name of the domestic supplier if such is available. Some years ago I recall having read in the June, 1947 issue in the Desiderata column that you had been testing face creams or at least creams to which lecithin had been added and that you found the lecithin tended to cause the creams to be unstable and to develop unpleasant odors. Have your subsequent experiments disproved this? I like lecithin for its desirable effects on the skin but until now have been unable to use it for those reasons earlier pointed out by you. S. Y., Texas.

**A.** The only supplier who commercially offers "placentine" to which you refer is the Chem. Labt. Dr. Kurt Richter, G.m.b.H., Bennigsenstrasse 25, Berlin, GERMANY. We know of no American source of supply. It was thought that lecithin would give discoloration to cosmetic creams. This has since been dispelled because the material now available is more pure. Our present observations on the subject would be that there are no reasons why you should withhold using lecithin of vegetable origin in any cosmetic product.

From time to time suggestions have been and will be made in this magazine with respect to processes, devices, materials, appliances, equipment and the like. It is not practicable for the writers and editors to have a patent search or examination made in connection with such suggestion. Our readers are, therefore, requested and indeed urged to determine for themselves whether any patent or other right will be violated before acting on any such suggestion.

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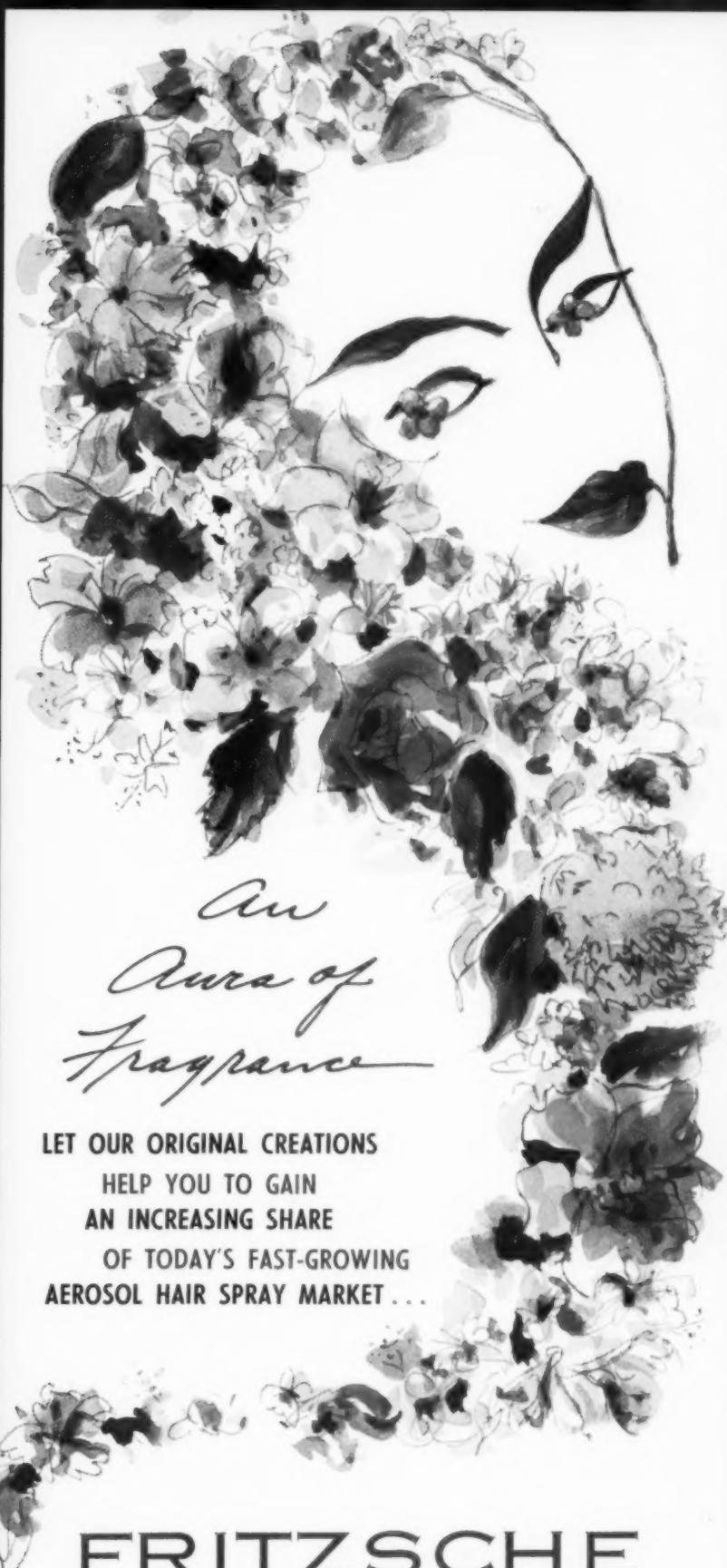
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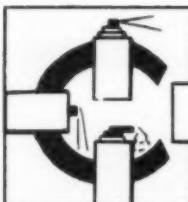
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# AERO SCRIPTS

Jack Pickthall\*



In the normal way there is not a lot of activity in England by way of talks, lectures or technical discussions on Aerosols. However, the last few weeks has seen a great deal of activity in this direction. On the 24th September, 1958 the Pressure Packaging Discussion Group held another of their meetings and on this occasion, Mr. Geoffrey Pickthall spoke on "Cosmetic Aerosol Formulations". The gist of this talk is as follows:—"I think everyone will agree that the great value of this group lies in the informal discussion which follows a talk. Both speaker and audience tend to be more open and I would like to take this opportunity to share any specialized knowledge I possess on the perfumery and cosmetic side with you. Just how this knowledge can be applied to the aerosol industry might be clearer after the discussion. Cosmetics generally include aqueous and spirituous solutions, firm creams or emulsions, liquid emulsions, non-emulsified oils, pigmented emulsions of various viscosities and powders. In terms of named products we have foundation creams, cleansing creams, emulsions and aqueous and spirituous solutions which include some specific beautifier, perfumes, face powders and talcs and lipsticks. Slightly removed from cosmetics we have shampoos, shaving creams, hair preparations (grooming, setting, waving, depilatory) nail varnishes. Further removed are soaps and toothpastes.

These have all been sold in non-pressurized packs for years and with a large measure of success. For the aerosol product we might claim ease, uniformity and efficiency of application, cleanliness, absence of air and new sales appeal. On the other hand, one might face increased cost, differing appearance and often labelling troubles. To be honest, the cosmetic manufacturer must visualize new sales, that is, the aerosol product must bring in business for a given type of product which is over and above the amount it already enjoys. Of course, a firm which does not sell a certain cosmetic at all could try to break into the market with the pressurized product. Of the cosmetics and near-cosmetics, we can forget certain items such as lipsticks, face powders, nail varnishes and soap. If you

accept ease, uniformity and efficiency of application as criteria, then hair-setting and waving preparations are obvious choices. The hair-sets have, without a doubt, not only stolen large sections of the market, but have in addition won new customers for this type of product. Why not permanent waving solutions? Or may be the difficulties embracing aqueous systems are too great.

Everyone is familiar with the idea of selling perfumes whether straight handkerchief type or toilet waters in a pressurized container. Although there are many difficulties to be overcome as far as formulation of the perfume is concerned, the general picture of presentation is pretty clear. On this particular subject I would say that many people have not really understood the effect on odour which spraying has. If you spray an alcoholic solution of a perfume plus propellant onto a surface such as skin or cloth, then within a very short time you are simply left with an alcoholic solution of the perfume and this will give odour effects precisely the same as the solution prior to packing. It is only when the solution is sprayed into the atmosphere and smelled as tiny particles, that the odours of the individual ingredients take on such drastic odour changes. I think expensive handkerchief perfumes placed in attractive containers and complete with metering valves, could be very successful. Toilet waters (in aerosol form) are also due for success.

However, as far as formulation is concerned, let us confine ourselves to two items which themselves account for a large percentage of cosmetic sales. Firstly, foundation creams. In the old days these were emulsions of stearic acid in water and included a large amount of humectant such as glycerin and the emulsifier was usually potassium and sodium stearate. Today, many fancy additions are made and other emulsifiers employed. At any rate, the purpose remains to add to the face a layer which will spread easily and which will take away shine and most importantly, act as a base for the powder. Over the years, efforts have been made to add the powder to the cream so that application can be made in one operation. Thus we have seen products which are mixtures of powder and emulsion which vary from thin milks to

hard blocks. Using the normal liquefied propellants, the stumbling block to successful aerosol application is the production of excessive foam. To some extent the answer may lie with the compressed gases such as nitrogen.

The old vanishing cream was made (and still is in fact) by heating stearic acid and adding to this an aqueous solution of alkali and glycerin. The resulting emulsion was stirred until cold and a certain amount of air was beaten into the system. Despite this aeration the cream had an attractive, smooth pearl-like sheen. Emulsions of this type, dispensed by means of liquefied propellants, tend to swell and foam and are in fact rather unsightly. Improved appearance and a tighter foam structure can be obtained by means of other emulsifying agents, e.g., triethanolamine soaps and nonionic agents. Further, the addition of a non-polar oil in the internal phase is an advantage. Nevertheless, one has to face the fact that use of the normal halogenated propellant will result in some aeration.

In theory, the answer lies in the compressed gases where there is no question of the propellant becoming one of the emulsion phases. In effect, the gas should simply force the cream out of the container without changing its consistency or appearance. The difficulties which arise when a compressed gas such as nitrogen is employed are well-known and perhaps we could discuss this aspect later. Just as the vanishing cream is the parent of a host of other cosmetic creams, so is the old borax/beeswax cold cream. The original was (and again still is) made by heating beeswax and mineral oil and adding to this an aqueous solution of borax. Emulsification is almost spontaneous and little stirring required. The emulsion can be poured into jars while still warm and liquid. In this case no aeration arises. Cold creams therefore do not lend themselves to pressure dispensation by means of the liquefied gases. Here again, it should be possible to expel a cold cream by means of the compressed gas technique, but again, there are difficulties with falling pressures. If we could commence discussion on these two important types of cosmetics, vanishing and cold creams, I think we shall automatically branch out into a wider field which will include pigmented creams, cleansing creams, beautifying creams, deodorant creams and sun-screen creams."

This particular talk was designed to bring forth a real discussion on the possibility of selling well known cosmetics in aerosol form. It is regrettable however, that little of interest came by way of questions. There was a rather regrettable lack of interest in cosmetics. In point of fact, the discussion eventually went into highways and byways which had little or nothing to do with the main subject. Usually, these discussions are of the greatest value to all concerned, but for some reason or other this one failed to produce the results we had expected.

On October 22nd, Dr. William Mitchell of Stafford Allen & Sons gave a talk entitled "Problems in the Formulation of

(Continued on Page 80)

\* Chief Chemist, Polak & Schwarz, England, Ltd.

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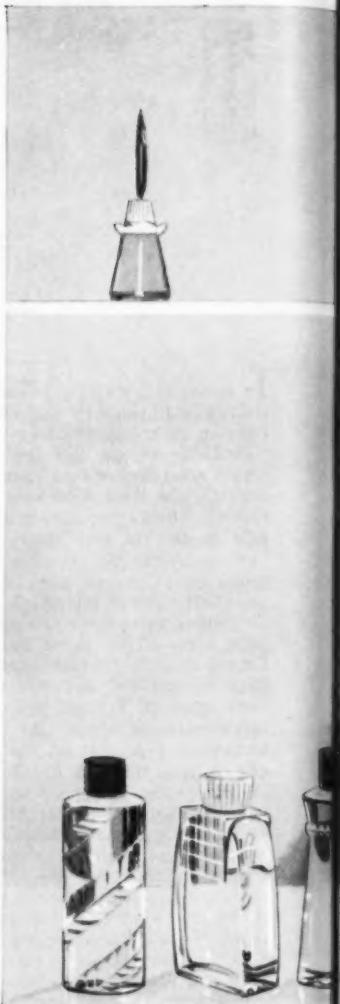
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NO FINEST METAL CONTAINERS MADE ANYWHERE

\*U. S. PATENT NO. 2,856,102 — OCTOBER 14, 1958



A self portrait shows John Goffe Rand, New Hampshire born artist who invented the collapsible metal tube which has become so useful today. Almost forgotten for his art, Rand earned a place in history for his invention.



GEORGE A. STAUTER



Times and tubes have changed since Rand gathered model at top. First wide use of metal tubes came in 1892 when a New London, Conn. dentist packaged toothpaste in tubes rather than in jars. Today's tubes (bottom) contain all kinds of paste-like products.

Millions of Americans perform a twice-a-day ritual that's virtually automatic. In the morning, and again at night, they meticulously brush their teeth, a routine that annually uses up more than a half-billion tubes of toothpaste of varying sizes.

Had these same Americans been living in the latter half of the nineteenth century their acquaintance with a dentifrice not only would have been infrequent—it was a luxury enjoyed by a fastidious few—but it also would have been unsanitary. At that time toothpaste was packaged in porcelain jars. One simply dipped a toothbrush into the paste and took what was needed. So, too, did other family members.

Then, in 1892, a New London, Conn., dentist, Dr. Washington Wentworth Sheffield, had an idea. Why not package the toothpaste he dispensed in a collapsible metal tube? Such a container, he reasoned, was both convenient and sanitary. All one needed to do would be to squeeze out the desired amount of paste and, as the contents were used, the tube could be rolled up. The air-tight tube also would keep the paste from drying out.

Dr. Sheffield's Crème Dentifrice was an immediate success. Collapsible tube packaging lowered the price of toothpaste and spawned the U.S. dentifrice industry that now accounts for \$150 million annually in retail sales. It provided the collapsible tube industry, then on the American scene a little more than a score of years, with the impetus it needed to lift it out of the packaging doldrums.

Today, in a consumer-oriented economy that is witnessing increasing emphasis on convenience packaging, the collapsible tube industry is a \$40 million business. Small in comparison to the industries that produce cans,



The late AUGUST HERMAN WIRZ founder of the collapsible tube industry in the United States after a visit to Vienna



The late GUSTAV RICHTER who put collapsible tube manufacturing on a mechanical basis in its early years in the U.S.



The late R. L. KENAH, for years dean of the industry, who influenced its steady development in many ways



The late ARCHIBALD W. PAULL Sr., responsible for a number of mechanical advancements in collapsible tube manufacturing



The late JOHN STROUD TURNER a hardy pioneer of the tube industry who contributed much to its development

The late GEORGE H. NEIDLINGER credited with developing the decorated tube and the molded plastic cap

The U.S. Collapsible Tube Industry		
Year Founded	Company	Plants
*1836	A. H. Wirz, Inc.	Chester, Pa. & Carrollton, Ky.
1898	Turner Tube Corp.	New Brunswick, N.J.
1900	Sheffield Tube Corp.	New London, Conn.
1902	Standard Collapsible Tube Co.	Rochester, Pa.
1904	Peerless Tube Co.	Bloomfield, N.J.
1910	Wheeling Stamping Co.	Wheeling, W. Va.
1913	White Metal Mfg. Co.	Hoboken, N.J.
1919	Victor Metal Products, Inc.	Newport Ark. & Chico, Calif.
	National Collapsible Tube Co.	Providence, R.I.
1920	Atlantic Manufacturing Co.	Newark, N.J.
	Aluminum Co. of America	Edgewater, N.J.
1922	Atlas Collapsible Tube Co.	Chicago, Ill.
1924	Sun Tube Corp.	Hillside & Washington, N.J.
1927	Art Tube Co.	Irvington, N.J.
1932	Michigan Collapsible Tube Co.	East Detroit, Mich.
1947	Metal Container Corp.	Indianapolis, Ind.

\*Began the manufacture of metal tubes in 1870

glass containers and folding paper boxes, it nevertheless commands unique respect in the multi-billion dollar packaging field.

The metal tube's pre-eminent position is due to its unique qualities and characteristics: it is non-porous, light in weight, sanitary, durable, versatile, non-refillable, decorative, easy to handle, has a long shelf life and is adaptable to modern mass production methods and to automatic packaging.

It is thus eminently suited for dispensing, in easily-controlled portions, medicinals and pharmaceuticals, cosmetics, shaving creams, dentifrices, spread-type food products, and household and industrial items such as lubricants, adhesives and similar products.

More than 40 standard sizes of tubes are available in sizes ranging in diameter from  $\frac{1}{8}$  to 2 inches, in length from 2 to 10 inches and in capacity from  $\frac{1}{8}$  dram to 16 ounces in aluminum, lead, tin, tin-coated lead and tin-lead alloy. Product compatibility largely determines the type of metal to be employed.

The tube-making process usually begins with billets of metal which are melted, molded into slabs rolled to proper thickness, and punched into slugs or blanks of pre-determined size. With soft metals, it is also possible to cast slugs. The slugs are extruded under high pressure. During the extrusion process the cold plastic deformation of the metal is accomplished when the metal fills the die cavity and the excess flows up over the straight sides of the cylindrical punch. This results in a one-piece, seamless, hollow tube with a plain or embossed shoulder and neck at one end and open at the other for filling. The tube may or may not have an aperture at this point. It is then trimmed to desired length, the neck threaded and faced, and, if aluminum, annealed at temperatures between 900°F. and 1200°F.

#### Decorated Tubes

If tubes are to be decorated—and most are—a base coating of enamel is applied, the tubes run through a drying oven, and, while the coating is still tacky, the decorative inks and printing—in one to four colors—are put on by offset lithography. Occasionally an external coat of clear lacquer, which enhances the lithography, is added as a protection against products known to attack inks and as a moisture barrier.

The collapsible metal tube, or the "compressible" tube,



A weather beaten tombstone in New York City's Woodlawn cemetery marks the grave of John Goffe Rand, inventor of the tube in 1841.

as it was sometimes called, had been around for quite a few years before Dr. Sheffield's historic experiment. In fact, it was in 1841 that John Goffe Rand extruded the first tube of tin to hold artist's oil colors.

Rand was an American portrait painter of considerable stature. A protege of Samuel F. B. Morse, inventor of the telegraph and a famous artist himself, Rand also had an inventive mind. When he went from his birthplace in Bedford, N.H., to Boston to study painting, his principal occupation—so it seemed to him—was the grinding of paint pigments for his teacher.

This chore irked Rand. Like other artists of his day, he had to grind the pigments and mix them in oil as they were needed. If any colors remained, they were put in "skin" bags made of animal bladder. The usual practice was to squeeze the colors through an opening made with a "spike"—a bone stopper that also was used to plug the opening to prevent the colors from oxidizing.

Rand finally found what he wanted—a "metallic vessel so constructed," his patent application states, "as to collapse with slight pressure and thus force out the paint or fluid confined therein through proper openings for that purpose and which openings may be afterward closed air-tight, and thus preserving the paint or other fluid remaining in the vessel from being injuriously acted on by the atmosphere."

Rand was residing in England when he patented his tube in that country and in the United States. He took out a patent (No. 8863) March 4, 1841 in London and registered his final specification six months later on September 4th. On September 11th, he received U.S. Patent No. 2252. While Rand referred to the tubes as being made of "drawn thin tin," he did not give any manufacturing details. In fact, the first collapsible tubes resembled the single-unit or "one-shot" tubes of today in that they lacked the familiar shoulder, neck and cap.



THEODORE W. SCHMITT, executive vice president of Peerless Tube Co. and second President of the Collapsible Tube Mfrs. Council



COL. STANLEY RUMBOUGH, chairman of the board of White Metal Mfg. Co. and former president of the industry's association



SETH MALBY whose vision prompted Alcoa to enter in the manufacture of aluminum collapsible tubes in the United States after World War I



The late R. V. (REG) ELLIOTT of Alcoa who died shortly before retirement in 1958 who aided in the development of aluminum tubes



THEODORE REED, president of Standard Collapsible Tube Co. whose company introduced the strip tube



JOSEPH H. HEIDIGER, vice president of Standard Collapsible Tube Co. who has specialized in sales development for many years



L. TRACY SHEFFIELD, president of the Sheffield Tube Co., son of the founder, is also chairman of a New England bank



HUBERT RICHTER, president of White Metal Mfg. Co. which helped to develop the automatic capping and lacquering machine



ARCHIBALD W. PAULL of Wheeling Stamping Co. which is the only company to cast the slugs or blanks from which tubes are extruded.

J. E. TURNER Jr. president Turner Tube Corp. represents the third generation in the direction of the company since it was founded.



STANLEY RUMBOUGH Jr. president of the Metal Container Corp. former assistant to the Secretary of Commerce of the U. S. A.



FREDERIC REMINGTON, president of Peerless Tube Co. which developed an improved machine for coating collapsible tubes internally



They were simply hollow cylinders with both ends open. Either end could be closed with pincers or with metal solder. To extract the colorants, it was necessary to perforate the tube.

When Rand registered his second British patent (No. 9480) on September 29th, 1842, he had improved considerably on his original idea. He now gave full details for the extrusion of tubes from flat discs, explaining that these could be pressed with nozzles attached complete and that the shoulders of the tubes could be stamped with words or names in one operation. One of these early tubes is now in the possession of a descendant, Mrs. I. D. Anglemyer of Washington, D.C. A third British patent (No. 9703) was granted to Rand on August 7, 1844, but this was for an alternative method of manufacture and improvements in tool design and did not supersede or alter the former patents.

Evidence is lacking as to whether Rand first manufactured tubes or arranged for this to be done by others. Artist colors are known to have been packaged in tubes in England prior to 1845—Reeves & Son, Rowney & Co., and Robertson & Co., have substantiating handbills, circulars and price lists. Rand was listed in the London postoffice directories from 1841 to 1848 only as an artist. In the latter year, he formed John Rand & Co., at 24A Cardington St., Hampstead Road, describing the firm as "patent collapsible tube manufacturers" and makers of "Aeolian pianoforte actions and stringed or wired instruments."

How Rand acquired the necessary capital to establish such a widely divergent manufacturing operation as collapsible metal tubes and pianoforte actions still remains a mystery. It may well have been his own. When he went to England in 1836 with his Charleston, S.C., bride, it was to further the study of painting. While he acquired somewhat of a reputation as a portrait artist by this time, his funds were meager in London, and for a time at least he had few calls for his services. His star began to rise when it was learned that he was an intimate friend of William Cullen Bryant, the rising young American poet, and soon orders began to pour in from the nobility and in time even from the royal family. The money he derived from these "sittings" might well have provided the funds he needed to venture into business. A resume of Rand's life, written by a member of the Rand family some years after the artist's death, states that he had formed a partnership with a Sir John Carr, but evidence on this point also is lacking. The only Sir John Carr at that time was a barrister and, if a partnership existed, it has not come to light.

From a commercial standpoint the collapsible metal tube was an immediate success. American firms manufacturing artist colors soon began to import the containers, failing to heed the admonition of an American art magazine editor that the tube was only a passing fancy. Rand stood to realize a sizeable gain from his unique invention, but the money it brought him went toward another of his inventions and he lost heavily. This was a device to be attached to the piano to produce organ-like tones. It ultimately proved a failure. To satisfy creditors, Rand disposed of his British rights in the tube.

#### Wirz the U.S. Pioneer

As a package that does just more than serve as a package the wonder of it is that it took so long for Americans to discover the metal tube's potentialities. It was not until 1870 that their manufacture was attempted in this country. Meanwhile, in France, M. Richard began making tubes between 1850 and 1854 on a hand-operated screw press, the first to do so on the European continent. The tubes were exhibited at the

Exposition Universelle de Paris in 1855 and won for Richard an award signed by Napoleon III. The award, the press and some of Richard's first tubes are still in the possession of Krieg & Zivy, successor to the Richard firm and, next to H. G. Sanders & Co. of London, the oldest company now fabricating tubes.

Rand is said to have returned to the United States in 1848, although the London firm bearing his name continued in business until 1868. Whether from the reverses he suffered abroad, or the losses he incurred in fighting French infringements on his patents, he never could be interested in producing tubes in this country. It remained for August Herman Wirz, a Philadelphia manufacturer of surgical instruments and metal specialties, to begin their manufacture here.

The A. H. Wirz firm, still in business and now located in Chester, Pa., was founded in 1836. In 1870, three years before Rand's death in New York city, Mr. Wirz went to Vienna as the U.S. Commissioner to the industrial exposition being held in that city. There he saw metal tubes being made on the newly-invented hydraulic press and visualized their commercial possibilities for products other than artist colors. He brought back plans for the machine and a German tool and die maker to build it and added tube-making to his business. This phase of operations soon became so profitable that, by 1885, the manufacture of surgical instruments was discontinued. Wirz was the first to package a cosmetic preparation in a collapsible metal tube, a product known as Evans' cucumber jelly. In 1914 the firm outgrew its quarters in downtown Philadelphia and moved to Chester, Pa. That same year H. S. (Zip) Darlington joined the company, beginning a 40-year tenure that was marked by his elevation to the presidency in 1929. Mr. Darlington retired in 1954 and was succeeded by Mark K. Dresden who held the post until his resignation in September 1958. Robert F. Cox now heads the firm.

Prior to 1900 the U.S. had only three tube manufacturing concerns. The second to enter the picture was the Consolidated Fruit Jar Co. of New Brunswick, N.J. This was in 1880, a year which saw the introduction of the first crank-type extrusion press, the work of Wirz's John Rausch. Consolidated's chief interest, then as now, was the production of bottle caps. Collapsible tube manufacture was more or less a sideline, and as the industry began expanding after the turn of the century, it became less and less a factor in Consolidated's business. Finally, around 1938, Consolidated discontinued tube production.

The third U.S. tube plant was the J. S. Turner White Metal Co. of New Brunswick, N.J. It was established in 1898 by John Stroud Turner, who still in his teens, emigrated to the United States from England. Turner learned the art of tube-making as an employee of the Consolidated Fruit Jar Co. When he set up his own business, the J. S. Turner White Metal Co.—the assumption is that "white metal" referred to tin—it was in his own home. His first customer was Johnson & Johnson, located in the same city, and the Turner firm, now headed by the third generation with J. E. Turner, Jr. as president, still makes tubes for various J&J products. In 1958 the name was changed to Turner Tube Corp.

From its very beginning the Turner firm was constantly on the alert to advance the art of tube manufacture. J. S. Turner was one of the first to experiment with cellulose as a raw material and one of the first to inquire into the possibilities of aluminum as a tube metal in this country. In fact, two years before his death in 1922, he went to Switzerland to buy machinery for this purpose, but he abandoned the idea. This was at a time when the Aluminum Company of America was preparing to join the tube manufacturing ranks.



ROBERT F. COX, president of A. H. Wirz Co. Inc. represents the fourth generation of the Wirz family in the company



MARK K. DRESDEN, former president of A. H. Wirz Inc., now retired, was first President of the Collapsible Tube Mfrs. Council



LOUIS H. C. HUNTOON, president of National Collapsible Tube Co. began by making captive cap tubes and later conventional type tubes



The late MAXSON B. EDDY, who died in 1958, served as Vice President and General Manager of the Globe Collapsible Tube Co.



WILLIAM SCHROEDER is co-owner of the Michigan Collapsible Tube Co. established in East Detroit, Mich in 1932



FREDERICK RENTSCHLER, who will be 84 years old in April, comes to work nearly every day to direct the affairs of the Art Tube Co.



JOSEPH D. MARTIN, president of Sun Tube Corp. a subsidiary of the American Can Co. continued effective production methods



CHARLES KLEINBECK vice president of the Atlantic Manufacturing Co. was one of the founders of the company in 1920



VICTOR MUSCAT, president of Victor Metal Products established in 1929 which now operates plants in Arkansas and California



LESTER B. PLATT who served for 20 years as secretary-treasurer of the Collapsible Tube Mfrs. Assn. and also later, the Council



JOSEPH C. STEINER has guided the Atlas Collapsible Tube Co. through the stormy years in the early twenties to its present position

#### Toothpaste and Growing Pains

What brought the collapsible metal tube industry into prominence and gave this container the recognition it so badly needed and justly deserved was, of course, toothpaste. Dr. Sheffield, one of the foremost dentists of his day, got the idea from the packaging in Europe of a food product in a metal tube. If paste-like foods could be put up in tubes, then toothpaste could be similarly packaged. With metal tubes imported from Europe, principally from Soissons, France, Dr. Sheffield's toothpaste soon was finding its way through the western hemisphere as well as other parts of the world. There was even a London agent, Miller, McLane & Co., and advertisements—not the first for a dentifrice—appeared in the Youth's Companion and Everybody's magazine extolling the benefits of the toothpaste in the new-type container. New London became a leading toothpaste manufacturing center. Dr. Sheffield not only made and sold his own product, but he packaged toothpaste for Beacham that was sold the world over in conjunction with the English firm's famous pills.

Toothpaste's only competitors of any consequence at the time were a red liquid called Sozodent, which was 37 per cent alcohol, and Dr. I. W. Lyon's tooth powder, still available today. Dr. Lyon's tin can with a "telescopic measuring tube" was a revolutionary package when it was introduced in 1891, but the packaging of toothpastes by Dr. Sheffield in metal tubes soon forced Sozodent out of existence and cut heavily into sales of the powdered product. Sheffield's sales went up so fast that they bought a machine to make their own tubes and then established a plant to make them for other dentifrice purveyors. The manufacture of tubes soon overshadowed that of toothpaste to such an extent that, in 1900, the New England Collapsible Tube Co., now the Sheffield Tube Corp. was established. It is now headed by L. Tracy Sheffield.

The metal tube virtually turned the dentifrice business into the toothpaste business. Its success prompted others to enter the field. The most notable was Colgate & Co. With its world-wide set-up for soaps, perfumes and other products, it did more than any other to hammer home the importance of brushing the teeth regularly. Colgate had been making a dentifrice in paste, powder and cake form since 1873. Only after it turned to the use of tubes in 1896 (years later Gilbert Colgate told W. Kyle Sheffield executive vice president of the Sheffield firm, that the New London company supplied the idea) did it enjoy marked success.

So well did Colgate exploit the new package over the years that it became the world's largest manufacturer of toothpaste. As Modern Packaging reported in 1949 in naming Colgate's Ribbon Dental Cream for Packagings' Hall of Fame: "Not only has Colgate become a leader in packaging, but along the way it has developed techniques in advertising and promotion that have become classics of mass merchandising." Millions of dollars were poured into these efforts. Compelling slogans intrigued the public and some of the best were tied to packaging improvements. "We couldn't improve the product, so we improved the tube!" Colgate boasted in introducing the famous ribbon opening in 1908. The "Aromatic Tooth Paste" became "Colgate's Ribbon Dental Cream"—a descriptive phrase still used today even though the metal tube no longer has a ribbon opening—and for years every tube and every carton glowingly stated: "Comes out a ribbon—lies flat on the brush."

Colgate's toothpaste tubes were the first to make use of lithography, a European development. When the paste was first marketed in tubes of pure tin the containers had paste-on labels and a clipped fold at the base.

The tubes were imported from Metalindustrie Richter A.G. in Pforzheim, Germany, which was established by Gustav Richter and still is in existence at Karlsruhe, the largest tube manufacturer in that country. In 1896 Richter, who had learned the mechanics of collapsible tube manufacture in France under M. Richard and was the first to mechanize production in Europe, introduced the enameled tube. Colgate was quick to seize on the merchandising possibilities of one-color decorated tubes. At first, the color was applied by hand with a brush. Quick drying lacquer colors were used and the tubes revolved on a machine that made the decorating process semi-automatic. In 1901, Richter developed a fully automatic lithographic process, using rubber rollers and plates.

#### Lithographing a Major Advance

Automatic lithographing represented a major advance. Coupled with the success of toothpaste in tubes, and the possibilities it held for tube-packaging of other paste-like products, it attracted others into the industry. One was David H. Wortendyke, a wholesale grocer of Paterson, N.J. Another was George H. Neidlinger, one of the industry's colorful personalities in its early days. Both incorporated their firms in New York City.

Wortendyke started out in 1902, but two years later he disposed of the business to R. L. Kenah, then a manufacturer of stationary gasoline engines and special machinery in New Brighton, Pa., and the Standard Specialty & Tube Co., now the Standard Collapsible Tube Co. of Rochester, Pa., came into being. Neidlinger was a dealer in druggist's sundries when he organized the Peerless Tube Co. on July 30, 1904, to "manufacture, buy and sell, print, lithograph and color, close and fill" collapsible metal tubes. Which of these two companies was the first to decorate tubes in this country is a matter of argument. An early Standard brochure claims that "We are the original manufacturers of colored and printed collapsible tubes in America." Neidlinger bought tubes from American manufacturers and decorated them on a machine he obtained in Germany. The early one-color lithographing machines consisted of a flat rubber plate and a mandrel on which the tubes were placed. The base coat was applied with a brush while the tube revolved and then rolled across the rubber plate. The tubes then were placed on "pins" to dry.

The contributions of both Standard and Peerless to the art of tube lithography in these early years did a great deal to increase the container's acceptance as a package. From one color the number grew to four and five with designs skillfully executed with the decorative art then in vogue. Standard printed tubes in five colors, including the base coat, as early as 1912, and in the same year Neidlinger was granted a patent (the patent was applied for in 1909) on a multi-colored tube printing press. Peerless, which moved to Bloomfield, N.J., in 1912, also was the first to reproduce a complete halftone photograph on a tube.

Both Standard and Peerless were pioneers in other phases of collapsible tube manufacture. In 1909, Standard introduced what it called the "stip" tube—a tube with an elongated tip that was an early development of the ophthalmic or eye-tip tube. Standard was one of the first to make, if indeed it was not the originator of, tubes with "captive" caps. These, like others that followed, never were completely successful. An enormous number of man hours and a great deal of money have been expended to capitalize on the illusive mirage of a tube with an ideal captive cap. Even today efforts are being made to revive interest in such tubes, but the containers are either functionally impractical or excessive in cost. Moreover, the approach has been psychological

rather than practical. Standard's "No-Cap" tube was made with a steel spring clip. A quarter turn of the cap exposed a vertical ribbon orifice in the tube's neck. There was only one fault: the tube's contents kept clogging the orifice.

Standard also was one of the first—Atlantic Manufacturing Co. was another—to experiment with a "tube within a tube," a conventional tube inside of which was a second tube. The outer tube contained toothpaste, the inner tube a coloring agent. The lower half of the inner tube fitted snugly into the outer tube with the upper portion having half the diameter of the lower part. Each tube had a neck but a common cap.

Peerless' advancements have been concerned not so much with the tube itself as with machinery and materials. When plastics were beginning to prove their wide utility in the early twenties, Neidlinger turned to them as a material to replace metal caps. It was at his suggestion that the Boonton (N.J.) Molding Co., produced caps of a phenolic material. At approximately the same time, Mack Molding Co. of Wayne, N.J., and Colt's Patent Fire Arms Co. of Hartford, Conn., became interested in this challenging problem. Like so many other industry developments, the first use of plastic caps is open to questions, but it is generally acknowledged that the honor belongs to E. R. Squibb & Sons. Peerless supplied the caps. Slow to take hold, caps of plastic virtually have eliminated metal caps due to their lower cost, greater eye appeal, and, in the case of polyethylene, a superior seal. Phenolics long since have been supplemented as a cap material by urea and polyethylene.

Another Peerless development of significance, and one which will be discussed later, was an improved machine for internal waxing of tubes. Internal coatings are extremely important because of the broad range of products packaged in collapsible metal tubes. Product contamination by the metal, and in certain cases, of product attack on the metal itself, must be scrupulously avoided.

#### Early Plastic Coatings

The contributions of W. Kedzie Teller, now executive vice president of Pharma-Craft Corp., had much to do with putting the industry on the right path with regard to internal coatings. Teller became interested in the problem in 1932 when Pharma-Craft began packaging experimentally an anti-perspirant cream in metal tubes and encountered a seepage problem at the crimped end of the container that was solved temporarily by dipping in latex. Later, Teller developed an attachment for filling machines that sprayed wax into the lower area of tubes to prevent seepage. This work provided the impetus for research that ultimately led to the complete coverage of the entire interior surface of metal tubes.

Teller also was responsible for another important contribution to tube technology—the development of a thermoplastic adhesive for cementing cap liners. In the 1930's liners were made of paper-coated composition, cork, or similar material, and glued into bakelite caps, then growing in use. When the caps were unscrewed, however, the liners often stuck to the mouth of the tube. Teller's adhesive solved this irritating problem and he gave the formula to both Wirz and Atlas Collapsible Tube Co.

Prior to 1910 the U.S. collapsible tube industry comprised six companies. That year Wheeling Stamping Co. of Wheeling, W.Va., came on the scene. Established in 1877 by Archibald W. Paull, and now in the hands of the third generation of the family, Wheeling for many years was a leading manufacturer of kerosene lanterns and lamps, automobile headlight burners and hub caps, cat-up bottle tops and other metal stampings. One of the

larger of the industry's 13 tube companies, its production activities are now confined almost exclusively to metal tubes. Wheeling over the years has been responsible for a number of advancements. One of the few to mold caps, it was the first to develop means for applying these automatically. It also was the first to use drying conveyors in the decoration of tubes and is the only company to cast the slugs or blanks from which tubes are extruded. Its claims to have been the first to use compressed air to remove tubes from extrusion presses was disputed in 1920 by Wirz, but Wheeling nevertheless was granted a patent on this innovation.

In the last couple of years Wheeling has come up with two new developments. It re-introduced the white plastic neck which had been used on tubes of a British toothpaste sold in this country some years ago and made by Peerless. The machine for applying and fastening this plastic neck to a metal collapsible tube was patented by Peerless in 1947. Wheeling's plastic neck for Crest toothpaste is a modification, the first to be employed for an American-made product. Of white urea, it is molded and applied to the tube on special-purpose multi-spindle trimming machines developed by the company. Wirz also began producing the plastic necks for Crest shortly after Wheeling entered the picture. In 1956, Wheeling substituted polyethylene for the conventional metal tip of ophthalmic tubes, making it an integral part of the container. Tips of plastic materials had been in use as applicators, but as separate units. The principal advantage claimed for the polyethylene-tip is that it provides a clean, soft applicator.

#### Period of Growth

Up to this time all of the U.S. tube companies were American-owned and operated. In 1913, at Colgate's invitation, its French and German sources for tubes set up the White Metal Manufacturing Co. in Hoboken, N.J. Colgate had been importing tubes from the Richter firm in Germany, but in 1900 it added a second supplier, Krieg & Zivy of Montrouge, France, which had absorbed a French branch of the German Richter firm and formed in Nancy a company known as the Societe des Anciens Etablissements G. Richter. Colgate's move for adequate supply sources in this country, even though the lithographing of tubes had reached a point here comparable to that in Europe, was prompted by the threat of war abroad. Thus it was that Hubert Richter, Carl Kleinbeck and Fritz Rückert arrived from Germany to organize White Metal. They were joined later by Frederick Rentschler, general manager of the Krieg & Zivy plant in Nancy and developer of the tin-coated lead tube. When the United States entered World War I in 1917 the company was seized by the Alien Property Custodian and its facilities later put on the auction block. White Metal was reorganized in 1919 with American stockholders. Col. Stanley M. Rumbough became president and Hubert Richter, son of Gustav Richter, was made vice president. They are now, respectively, chairman of the board and president.

White Metal always has specialized in mass production techniques and was the first to purchase and help develop the now widely-used horizontal Herlan press, and it contributed to the development of the combination automatic capping and lacquering machine.

Probably no other company has affected the growth of the U.S. collapsible tube industry as has White Metal. Kleinbeck, Rentschler and William Erhard, the latter joining the Hoboken firm in 1915 with no previous tube manufacturing experience, were instrumental in setting up rival firms. Kleinbeck and Rentschler, with Henry Braun, Ceasar Muzzi and the late Julius Lichtenstein, formed the Atlantic Manufacturing Co. in 1920 in

Newark with which Braun, now president, Kleinbeck as vice president and general manager, and Muzzi as treasurer still are identified. Rentschler later sold his holdings and set up the Art Tube Co. in Irvington, N.J. Erhard joined the newly-formed Globe Collapsible Tube Co. in Hoboken.

The five-year period after World War I saw the industry's greatest growth. Ten companies sprang up, of which seven remain. The first postwar plant was Bond Manufacturing Co. in Wilmington, Del., which started fabricating tubes in 1919. Bond had been producing bottle crowns and composition cork and during the war turned out copper tips for artillery shells. The Heromade presses that were used to shape shell tips were adapted for tube manufacture, but they left much to be desired.

In a sense Bond was an offshoot of Wirz. Samuel Bond and Harry Scott, with Charles Tome, organized the company in 1918. Tome had been sales manager of Wirz, and to obtain the production knowledge that was needed for tubes, he induced George Temple, Wirz's chief mechanic, to join the venture. It was with Bond that Frederic Remington, who went to Peerless in 1929 and a year later acquired controlling interest, entered the industry. In the early twenties Bond bought the facilities of Western Cartridge Co. of East Alton, Ill., and in 1936 merged with the Pennsylvania Tube Co., which was organized in 1919 in Williamsport, Pa., to form the Bond-Penn Tube Co. Two years later, in 1938, Bond-Penn sold out to Wheeling.

#### Globe's Early Trials

The year 1918 also saw the formation of Globe, but it was some time before tubes came off its production lines. I. Lehman of Lehman Bros., metal brokers, set up the company in Hoboken and in 1920 hired the 26-year-old Erhard as manager. Globe had hard going. Its principal customer was E. R. Squibb & Sons—it got the business because it could satisfactorily re-produce the Squibb gold seal—but even with this substantial start, Globe was beset with financial troubles.

Squibb finally came to the rescue in 1925. For six months it poured money into Globe and supervised its operations. Finally, in order to maintain its source of tubes, Squibb bought Globe outright. It kept Erhard in charge of operations and in 1929 moved the plant to Squibb's operations in Brooklyn. It was during this period, and prior to a further move of operations to Long Island City in 1957 when Squibb established its Queens laboratories, that Ralph Westgate, an executive of the parent company, took an important interest in establishing Globe as a major manufacturer of collapsible metal tubes. When Olin-Mathieson Chemical Corp. acquired Squibb, Globe became a subsidiary with Maxson Eddy as vice president and general manager and Erhard as director of operations. Eddy, who endeared himself to the industry in the brief time he was a part of it, died of a heart attack early in 1958, less than a year after Globe's operations were discontinued and the machinery and equipment sold. Most of its production facilities were bought by Victor Metal Products, Inc. for use in its domestic and foreign operations.

Under Erhard, Globe made a number of technological contributions that further strengthened the industry's position in the packaging field. One was an improved version of the syrette, a self-contained single-dose hypodermic unit used in great numbers by the U.S. armed forces and its allies in both World War II and the Korean war.

The idea of a syrette was not new with Globe. Before World War I a man named Greeley patented a small collapsible metal tube having a solid neck except for

a small hole, less than the diameter of a needle, through its center. The Mulford Co., a Baltimore pharmaceutical manufacturer, bought the Greeley patents, but efforts to produce the syrettes proved unprofitable because of a leakage problem. Early in World War I the Army asked Mulford if it could supply a "Hypo Unit" of the Greeley type in two forms—one to contain strychnine, the other morphine. Combat troops were to be supplied each type. The strychnine was to be used by a soldier if he felt faint, the morphine if in severe pain. The Army laid down one condition: the syrette was to be made so that it could be used by a wounded man with only one hand, and, in extreme cases only, with two fingers remaining.

Mulford assigned Dr. Paul S. Pittenger to design a syrette to meet the Army's unusual specifications and he subsequently patented two units, one a collapsible rubber tube of two types, the other a metal tube that overcame the defects of the Greeley unit. Several hundreds of thousands of the metal type were supplied to the Army and for many years Mulford continued to market sterile solutions in these containers.

Late in 1938 the Army and Navy asked Squibb, which filled the syrettes with morphine, to see what it could do to improve on the Mulford unit. Erhard came up with what was wanted in a single day. Essentially, the syrette is a metal tube fitted with a hypodermic needle protected by a transparent hood. It proved its value by minimizing pain to battle casualties and danger of death from shock. Squibb made 100,000 syrettes for experimental purposes and these proved so successful that the armed forces increased their orders. All told, Squibb and Globe turned out 75 million syrettes during World War II, including a shipment that arrived at Pearl Harbor on the day that strategic U.S. Naval base was sneak-attacked by the Japanese.

#### The Mastitis Tube

Globe also was a supplier of mastitis tubes of which Peerless was the original developer. The idea for the mastitis tube, so named because of an elongated tip that enables dairy farmers to administer antibiotics to cattle afflicted with mastitis, a disease comparable to the common cold in humans and which affects the udders of milch cows, stemmed from Lederle Laboratories. Lederle saw in the metal tube a means of successfully combatting mastitis and presented the challenge to several industry manufacturers. Peerless was the first to solve the problem. Wirz developed a different type of mastitis tube, one with a friction fit cap and no thread, for another customer. Peerless and Wirz are the leading suppliers of mastitis tubes which have so simplified treatment that the incidence of the disease has been reduced substantially.

Three companies set up business in 1919. Victor Metal Products, one of the industry's larger producers, in Brooklyn; National Collapsible Tube Co. in Providence, R.I., and Pennsylvania Collapsible Tube Co. in Williamsport. Victor's forerunner was the American Metal Co. founded by Lazarus Muscat and now headed by his son Victor. American Metal made impact extrusions and dealt in metals, including blanks for tubes, and it was a natural step to turn to the manufacture of tubes. For many years, and particularly during World War II, Victor's Brooklyn plant was expertly managed by Joel Kronman, who died in 1955. Victor's plants are now located in Newport, Ark., and Chico, Calif. and are owned in part by The Colgate-Palmolive Co.

National was an outgrowth of a small munitions plant established by William C. Huntoon. For years it manufactured tubes by a true extrusion process. By this

method a cup was formed from the blank, which in turn, was placed on a dial and forced through a die, the complete tube coming out through the die. This was an ideal method for captive-cap tubes (William's shaving cream tube), but not for other kinds. While the company continued to maintain interest in this type of closure, producing them on a volume basis for a time, it replaced its original presses for the type used today and began manufacturing tubes by conventional means in 1933.

Atlantic and Aluminum Company of America joined the industry in 1920, the former in Newark and the later along the Hudson river in Edgewater, N.J. Kleinbeck and Rentschler, after helping to establish Atlantic, continued their relationship until 1927 when Rentschler, who in 1957 marked his sixtieth year in the tube industry—first in Germany, then in France, and since 1914 in the United States—founded Art Tube Co.

#### Enter Aluminum

Aluminum's possibilities as a tube metal brought Alcoa into the field. The first collapsible tubes of aluminum were produced experimentally by Neher Co. in 1914 in Switzerland. Shortages of tin and lead, born of World War I, turned attention to aluminum which a generation later was to command top priority in World War II. Commercial production was started in 1915. By the end of 1916 Neher Co. was producing aluminum tubes at the rate of 6,000 gross per month, climbing to a rate of 20,000 gross per month by the following year. The tubes were used mostly for toothpastes and toilet creams and manufacturing technique reached the point where it was believed the product offered an outlet for aluminum.

With the end of the war, lead and tin, particularly tin, became more plentiful, and interest in aluminum as a tube metal took a sharp drop. One reason was that the metal, considerably harder than tin or lead, is more difficult to extrude. Then, too, larger and more powerful presses are required, an expenditure few companies were willing to make in so doubtful a market. Furthermore, it was apparent that extensive research and development would be necessary if aluminum was to gain a foothold. These were the facts that led J. S. Turner, when he went to Europe in 1920, to dismiss any thought of manufacturing aluminum tubes. But these problems did not deter Alcoa. It was convinced that once the extrusion difficulties were solved, aluminum eventually would win acceptance and ultimately capture a major portion of the market.

Alcoa purchased equipment in Switzerland and installed the machinery at its Edgewater, (N.J.) works. This unit started limited production in 1921.

Competition of tin and lead made the introduction of the aluminum collapsible tube extremely difficult. Moreover, much of the original foreign equipment had become inferior to American machinery. As a result, Alcoa purchased new equipment and developed improved methods to put the manufacture of aluminum collapsible tubes on a commercial basis. For a number of years the Alcoa operations, guided by Seth Malby and aided by R. V. (Reg) Elliot, who died only a few months away from retirement in 1958, pioneered the manufacture of aluminum tubes in this country. It was Malby's vision and persistence that prompted Alcoa to first enter and then persevere in tube production.

Statistics tell the story of aluminum's phenomenal rise in the post-world War II era. Consumption of aluminum tubes, as compared with those of other metals, skyrocketed from 5% in 1945 to 58.89% in 1957. Aluminum tube production advanced from 72,305 gross in 1944 to 1,850,988 gross in four years. In 1955,

an industry total of 3,888,376 gross of aluminum tubes were manufactured, a figure exceeding the 1937 total production of tubes of all types.

After introducing the aluminum collapsible tubes in this country, Alcoa encouraged other manufacturers to enter the field and offered them the production know-how and tooling techniques it had developed. Prospective tube fabricators also were given access to Alcoa's research and development facilities as well as the privilege of inspecting the company's tube-making equipment.

Co-operative efforts by Alcoa and a leading dentifrice manufacturer culminated in 1944—the year it set up straight line production, one of the earliest of such attempts—in the development of a satisfactory aluminum tube for dental cream. Alcoa later encouraged other tube manufacturers to use aluminum for dentifrice packaging, thus vastly expanding the market for aluminum tubes. An inhibitor was incorporated in some dentifrices to assure their compatibility with aluminum. Lather-type shaving creams, likewise, presented corrosion problems, which Alcoa solved by developing an inhibitor. Today, such creams are packaged satisfactorily in aluminum tubes. Alcoa also has worked extensively and successfully on interior tube coatings for products which could not be reformulated for packaging in plain aluminum.

#### Atlas' Early Troubles

Probably no company has survived more vicissitudes than Atlas which started out in 1922 as the Horak Manufacturing Co. Jaroslav Horak, a self-styled inventor, claimed to have found a new way to manufacture tubes, but in three years the company lost approximately \$200,000 and finally went into bankruptcy. One of the stockholders, Joseph C. Steiner, Sr., who had dropped \$50,000 into the venture, acquired the company at the foreclosure sale and reincorporated it under the name Atlas. Horak again entered the picture, this time as co-owner and vice president, but the losses continued and Steiner pulled out in 1927 with a chattel mortgage against the property.

For the next three years new money and new life were pumped into Atlas without results. At the beginning of 1930, J. C. Steiner Jr. took over. He had been given the chattel mortgage as a Christmas present and told to see what he could do with the company. The younger Steiner turned to his father-in-law, Frank Simek, a retired manufacturer who had organized the Columbia Snap Fastner Co., for financial assistance and engineering know-how. One of the first things young Steiner did was to make a trip east where all of the tube plants were then located. He visited Peerless, where Remington had just assumed control, and was "shown everything except the books." With the knowledge gained at Peerless, and with a new extrusion press and decorating equipment bought during the trip, Steiner and his father-in-law set to work. They modernized the Atlas plant, setting up one of the first conveyor systems between the coating machines, the drying ovens and the printing equipment, but it was four or five years before either drew any salary above the \$25-a-week they had allotted themselves. Nevertheless, their business prospered, red ink gave way to black, and with the business that accrued during World War II, the headaches came to an end. So, too, did the corporation. It was dissolved in 1945 in favor of a six-way family partnership.

#### Great Growth Ends

Establishment of Sun Tube Corp. in 1924 climaxed a rapid period of growth for the industry. Beginning in

1919, six companies came into being in as many years and only three others were to come along to give the industry its present form. There were others but these either would be absorbed or would pass out of the picture altogether. Some had been set up to package the products they manufactured and did not attempt to sell tubes to others. Wheeling bought out Larkin Co. of Buffalo; Peerless acquired the tube manufacturing units of Lehn & Fink and Devoe & Raynolds; Wheeling and Sheffield split the facilities of Mechanical & Chemical Engineering Co. of Leominster, Mass., and Bond-Penn's units were sold to Wheeling, Victor, Wirz and others. Three already abandoned or would give up the manufacture of tubes: Bay State Collapsible Tube Co., Universal Collapsible Tube Co., and Consolidated Fruit Jar Co.

Sun's organizing corps were former Peerless men—Frank J. Lynch, Donald M. Smith and others—and they had the backing of Henry, Lee and William Bristol of Bristol-Myers Co. Lynch, an automobile race driver and aviator who was killed in an airplane accident in 1931, evolved straight-line production techniques. This made necessary the development of new types of equipment and the adaptation of conventional machinery to automatize insofar as possible the continuous movement of tubes from operation to operation. The engineering work was carried out by Vice President John H. Friden. Lynch, Friden, and former presidents William M. Rose and Rudolph S. Schenk, built Sun into one of the industry's larger companies, located at Hillside, N.J.

Eventually Sun became a subsidiary of Bristol-Myers. In 1950, it moved its aluminum tube and condenser can facilities to a modern plant at Washington, N.J. and later was joined in the condenser can business by Peerless, Wirz and White. Kenneth M. Leghorn, who joined Sun in 1947, was appointed president in 1953. In December, 1956, Sun was sold to American Can Co., which previously had bought the plastic tube manufacturing facilities of Bradley Container Corp. in Maynard, Mass., from Olin-Mathieson, and retained Leghorn as president. For Sun and another firm, Kienle & Co., a manufacturer of lithographing inks and enamels, Canco paid the equivalent of 7½ million in stock. In July, 1958, Leghorn took over as head of Bradley and Joseph V. Martin, Sun executive vice president, stepped up to the Sun presidency.

#### Sun's 'Single-Shot' Tube

Sun has a number of tube "firsts" to its credit. One of note is the break-off tip tube for which, due to patent rights, it was the sole manufacturer for many years. The "single-shot" tube, with a finger-nail indentation so that the flat end of the container can be torn off easily, was first used to package individual servings of G. Washington instant coffee and later Bromo-Seltzer. The latter, for single doses, still is packaged in this manner, and represents one of the most spectacular applications of tube packaging. Another important use for "single-shot" tubes came later, in large extent after 1950, when paint manufacturers, in order to provide a wide range of colors without factory pre-mixing and to reduce storage space at the factory, wholesale and retail levels, adapted them for colorants. By simply adding a coded tube of colorant to a base paint, usually white, the range of available colors was extended into the hundreds. Every major paint manufacturer now has a paint-tube colorant system.

Sun also was the first company to make an aluminum tube having a break-off tip. It was the first in the industry to produce an aluminum aerosol container and it is one of two tube manufacturers to make its own aluminum slugs.

The two companies that have come into being in the last quarter of a century are the Michigan Collapsible Tube Co. and Metal Container Corp. Michigan was organized in 1932 in Detroit. Its co-owners, who gained full control in 1953, are two brothers, Walter and William Schroeder. Walter became associated with the company shortly after it was established and William joined the firm in 1935. In 1953, operations were moved to East Detroit. Metal Container was set up in Hoboken by separate but related interests of White Metal in 1947 at a time when aluminum was becoming a major tube metal. As other Eastern tube manufacturers turned to aluminum, Metal Container's operations were moved to Indianapolis to cover midwest markets. A producer of aluminum tubes only, it is headed by Stanley Rumbough, Jr., as president. In 1955 White Metal formed a wholly-owned subsidiary called Extrusion Development Corporation in Hawthorne, N.J. This company, in addition to capacitor can manufacture, has developed automatic tube lines. Its president is ex-Sun president Schenk.

Perhaps the roughest period the industry has had to face was that during World War II when the government clamped top priorities on tin and aluminum. Tin at that time accounted for about 70 per cent of all tube manufacturing and lead most of the remainder. Aluminum had not yet come to the forefront, but its use for tubes was forbidden entirely. This left tube makers with lead as the only primary metal and a raw material unsuited for the packaging of many products. Tin was allowed only in amounts necessary for alloying and a few critical items. The War Production Board order banning or drastically restricting the use of strategic metals except for military use threatened to deal the tube industry a blow from which it might have taken years to recover. At this point industry members banded together and submitted to Washington a plan that won ready acceptance and saved tube manufacturers from a crippling blow.

In essence the proposal was this: the tube industry would set up a salvage depot to reclaim the metals from used tubes which consumers would be required to turn in at retail stores in order to purchase a new tubed product. The tube industry's customers, under the leadership of Bristol-Myers, already had taken steps along this line by enlisting the aid of manufacturers of tubed articles and by initiating an extensive advertising and publicity program. The Toilet Goods Association, for example, urged in a bulletin to members that all-out support be given to the collection of used tubes.

#### TSI to the Rescue

As a result, the Tin Salvage Institute was incorporated under New Jersey statute on February 2, 1942—less than two months after the Japanese attack on Pearl Harbor—and a contract negotiated May 28 with the Metals Reserve Co., which had been set up by the War Production Board's Metals Division. The contract designated the TSI as agent for the Metals Reserve Company under Conservation Order #M-115, which also stated that no retailer could sell a tube of toothpaste or shaving cream without getting a used tube in return. The TSI's purpose was to acquire and reclaim scrap metals or combinations of metals contained in collapsible tubes and dispose of the reclaimed metals in accordance with government wartime directives. The tin that was reclaimed went to the WPB, the lead to type foundries and paint manufacturers designated by the government. For every pound of tin that was reclaimed the tube industry received three pounds of lead. Each tube company was allotted metal base on end-use and in the amount used during a designated base period.

The TSI operated under an 11-member board of trustees and membership was open to both manufacturers and users of tubes. On the original board of trustees were Lee H. Bristol, Darlington (Wirz), Remington (Peerless), Rumbough (White Metal), Rose (Sun), Ralph S. Westgate (Globe), H. A. Larson (Sheffield), Joel Y. Lund of Lambert Pharmacal Co. of St. Louis, Roy W. Peet of Colgate-Palmolive-Peet Co. (now Colgate-Palmolive), Howard A. Sumner of Norwich Pharmacal Co. of Norwich, N.Y., and Henry F. Woulfe of Pepsodent, Chicago.

Rose, president of Sun Tube, was named president, and Remington was made vice president of TSI. Lester B. Platt, secretary-treasurer of the Collapsible Tube Manufacturers Association, was appointed secretary-treasurer, and Edward L. French of Sun as assistant-treasurer. Through the generosity of Bristol-Myers, the Tin Salvage Institute's operations were set up in the Newark meadows in an old World War I building owned by Bristol-Myers' Rubberset Division. Rose and Remington laid the groundwork, but day-to-day operations were in charge of Schenk, later to become Sun president, and Friden.

To get started, \$25,000 was raised in voluntary contributions from industry members. Sun also aided financially until the first appropriation of \$50,000 was received from the government. When the contract was entered into with Metals Reserve it was expected that, by April 1943, TSI's operations would cease. Instead, TSI operated formally until April 7, 1945 when the Metals Reserve Contract was terminated officially.

TSI was one of the few, if not the only, war-born agency to end up with a profit. In the three years of its existence it turned over to the government \$625,000 in profits. It was out of the red and in the black before the end of 1942. By December 30th of that year it had collected 1,987,941 tubes (of which 750,000 had not yet been processed), received approximately \$113,000 in advances, and made sales of \$105,000, and had a \$93,000 inventory. The conduct of the salvage depot elicited from the Metals Reserve vice president an official commendation on "an important wartime job well done."

#### Peerless' Waxing Machine

While the TSI kept the industry's head above water it was another wartime development that enabled it to package more products than otherwise would have been possible without tin, a metal unique for its non-toxic properties. This was a vastly efficient machine developed by Peerless for internal waxing of lead tubes. Waxing machines then in use were not entirely satisfactory, failing in many instances to provide a complete and reliable coating. Nor were there sufficient waxing machines available to the industry. Peerless' waxer was a vast improvement and Remington made available the machine design to the industry without royalty during the war. Peerless since has redesigned and improved the machines, obtaining a patent in 1947. About 50 of these waxers, requiring only one operator, are in use in this and other countries.

In spite of the difficulties under which the industry labored from 1942 through 1945 it nevertheless was essential to the war effort and it was so proclaimed. And the tube itself proved its versatility. Because of the ease with which this container can be handled, shipped and used under wartime conditions, and the protection afforded products over long periods of time, the armed forces specified its use for many items. Among the more unusual of these were camouflage paste for hands and face; chemical substances that quickly detect, by changing color, the presence of poison gas; pyrotechnic pastes that, when ignited, were used



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as directional signals by airborne and other troops; ointments for the treatment of flash burns, and dental impression materials.

The tubes containing the chemicals for the detection of poison gases in small concentration were unusual. After other types of packages failed, the Chemical Warfare Service turned to the collapsible tube industry, taking the problem to Wirz. The Chester firm devised a lead tube with an elongated neck and sealed by low temperature solder. At one time, Wirz produced 1,400 gross of these tubes per day and more than 100 million tubes during the war. Sun was a second supplier and also produced the tube in quantity. For several years Peerless devoted more than half of its capacity to the production of ointment tubes for the prevention of poison gas burns.

With war out of the way the collapsible tube industry began to make up for lost time. Once its sources of metal became stabilized its annual volume continued to rise. By 1953 it had grown to 6,682,405 gross (962,262,320 units) and in 1955 to 7,264,947 gross (1,046,152,368 units), the first billion-unit year in the industry's history. In 1957, an all-time record of 7,568,324 gross (1,089,838,656 units) was produced. This was the end-use breakdown:

	<i>Gross</i>	<i>% of Total</i>
Toothpaste	4,037,443	53.54
Medical & Pharmaceutical	1,424,311	18.82
Household & Industrial	1,123,734	14.85
Cosmetics	663,668	8.77
Shaving Cream	314,026	4.15
Food Products	5,142	.07

Aluminum continued its spectacular domination of metal use, accounting in 1957 for 58.83 per cent of metal content. Lead was next with 28.58 per cent followed by tin 9.62 per cent, tin-coated lead 1.86 per cent, and tin-lead alloy 1.11 per cent.

The last decade has witnessed some significant shifts in tube consumption. The phenomenal growth of the pharmaceutical industry with the development of the so-called "wonder drugs"—the sulfas, the antibiotics, the antihistamines and more recently the hormones—has had a parallel growth in packaging and particularly with respect to the metal tube. Almost one-fifth of all tubes produced are now used for packaging medicinal and pharmaceutical items, a rate double that of 1947 and second only to the number of tubes produced for toothpastes. Peerless has specialized in tubes for pharmaceuticals for the last 25 years. Primarily responsible for a maximum effort in this direction was Theodore W. Schmitt, now executive vice president. He and President Remington were particularly aware of the advantages of diversification and a broader spread of tube production was deliberately sought. Wirz and Sheffield also have made major moves in the pharmaceutical field.

The parade of "wonder drugs" began in 1936 with development of the sulfas, the most spectacular drug discovery up to that time. By 1942, sulfathiazole ointment made its appearance in a tube and the following year a sulfadiazine ointment was marketed. These drugs later were overshadowed by penicillin and other antibiotics and by 1947 a penicillin ointment was made available for ophthalmic and dermatologic treatment. Both terramycin and aureomycin ointments in 1952, and hydrocortisone acetate and cortisone acetate in 1954 were packaged in metal tubes. One of the principal reasons for the metal tube's preferred place in pharmaceutical packaging is the protection this type of container affords both the product and the consumer. Light and air cannot penetrate the tube, thus preserving antibiotics from loss of potency or contamination.

The packaging of medicinal and pharmaceutical preparation in tubes has not been without its problems. One came during World War II when tin and aluminum were cut off, shifting the burden to pure lead tubes and those having a slight mixture of tin. If wax linings had not been developed prior to the war many of the vital medications used by the armed forces could not have been packaged. The improvement in waxing machines for applying these coatings was the solution—one that brought approval from the Pure Food & Drug Administration—but soon another obstacle arose. This was the development of aqueous-base ointments in preference to those with a petrolatum base. Although more effective medically, the aqueous-base ointments even penetrated wax-lined chemically inert tin tubes. Vinylite and phenolic-base lacquer linings overcame this deficiency. In recent years great strides have been made in internal coatings of which there are three main types: waxes of various sorts, unconverted interior lacquers, and thermo-setting linings of a wide variety. These latter are converted resins, the toughest, hardest and most impervious of the linings in use. They are characterized by cohesiveness, continuity and flexibility of film.

Another development having wide use in the packaging of ethical medicinal and pharmaceutical preparations is that of stripable lithography or removable coatings. Stripable coatings were introduced by Wirz in 1953 and patented under the trade name of "Ready-Peel." Estimates of its use as a labeling medium range as high as fifty per cent and some companies, like Ciba Pharmaceutical Products, E. R. Squibb & Sons division of Olin-Mathieson, Chas. Pfizer & Co. and Lederle Laboratories of American Cyanamid Corp. have applied it to all tube packaging of ethical products. Stripable lithography's appeal is both economic and esthetic. In virtually all instances, packaging costs have been reduced where this type of decoration has replaced gummed paper labels. But it is the improved appearance of the tube that has won the approval of doctors who prescribe and druggists who dispense ethical drugs. Druggists have termed it "the greatest advance in pharmaceutical packaging since invention of the collapsible tube." Once applied, the stripable coating is firmly affixed, and once removed, it cannot be replaced. It thus can serve as a permanent label or be quickly removed for prescription sale. For antibiotics packaged in such tubes, batch control numbers are die-stamped into the crimp at the time of filling.

Another shift in tube packaging has been in shaving creams. First packaged in a metal tube around 1915, shaving creams were once an important segment of the tube market. But with the introduction in 1951 of aerosol packaging shaving creams the demand for this end-use of tubes began to fall off. In fact, even before 1951, the use of tubes for shaving creams had lost some ground to the electric shaver. By the beginning of 1957, total production of shaving cream tubes had declined by nearly 50 per cent to less than five per cent of overall tube volume. The shift of consumer taste, influenced by the expenditure of millions of dollars for advertising and public relations activities, is a dramatic illustration of packaging's power in this era of mass merchandising.

The accelerated growth of the industry in the early part of the century led to the establishment of the Collapsible Tube Manufacturers Association in 1914 with R. L. Kenah of Standard as president and Herman Wirz of Wirz as secretary. Probably the most important action to result from this association was the general acceptance of a uniform code of trade practices. But the association functioned only irregularly, however, and

for years after World War I it remained dormant. With the passage in 1933 of the National Industrial Recovery Act it was necessary to revive the association in order to establish an industry code. Stanley Rumbough Sr. of White Metal was elected president and Remington vice president. In 1935, the association was disbanded again when the NRA was declared unconstitutional, but two years later it was once more reorganized with Remington as president, J. Everton Turner of the then J. S. Turner White Metal Co. as vice president and Lester B. Platt of the management firm of Stevenson, Jordan & Harrison as secretary-treasurer. Through the interchange of ideas, the assembly of statistical data, and joint promotion of research and other matters, the association functioned successfully until March 31, 1957, when, because of disagreements it was terminated and replaced by the Collapsible Tube Manufacturers Council.

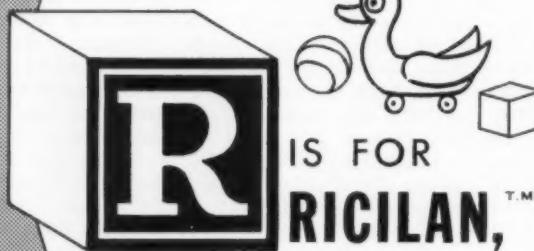
The tremendous emphasis that began to be placed on packaging after World War II, and the arrival on the competitive scene of the plastic tube, prompted the industry in 1954 to embark on a public relations program. Malby and Remington spearheaded the campaign. The Collapsible Tube Manufacturers Council was set up as the public relations arm of the CTMA and Carl Byoir & Associates, Inc. was retained as counsel. All members of the industry became members of the Council, whose primary aim was "to unite the thinking and the energies of the industry in promoting the important packaging role played by collapsible metal tubes—at a time when scores of industries are coming to market with conveniently packaged products that contribute to the health, enjoyment and comfort of the American people."

Mark Dresden of Wirz was elected first president of the Council and named to serve on a committee with him were Remington, who had taken an active part in promoting the program; C. Christy Jones of Alcoa; Charles Stiassni of White Metal; Muscat of Victor; Joseph H. Heideger of Standard; Leghorn of Sun and A. W. Paull Jr. of Wheeling. Dresden later was followed by Theodore W. Schmitt of Peerless as chairman.

Although successful in focusing national attention on metal tubes as a packaging medium—the two years of the program coincided with successive annual increases in tube shipments for the first time since 1945—the program was discontinued in December 1956. Some members felt that the goal had been achieved and the program was discontinued temporarily. But the hard-selling efforts of rival packaging interests, the introduction of Ipana Plus in a plastic squeeze container, and the test marketing by a large toothpaste manufacturer (Colgate-Palmolive) of dentifrices in aerosol containers gave impetus to conducting new promotional activities. The effect of this competition still is an unanswered question.

The collapsible tube industry's path has not been all sweetness and light. While it has had its ups and downs, it nevertheless continues to grow, slowly to be sure. Complete mechanization of the production line, which would aid materially in lowering manufacturing costs, is an objective of the industry's more progressive firms. An internal coating that is more or less universal is another aim and considerable research is being undertaken by individual companies along this line.

Yet the collapsible metal tube that John Goffe Rand envisioned more than a hundred years ago still is basically the same in structure as it was in 1841. The fold-and-crimp seal long since has disappeared and the metal tube has progressed from a crude container to a package of distinction. That it has survived the competition down through the years is a tribute to the preferred position it enjoys in packaging.



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## Technical Abstracts

**THE SPECTROPHOTOMETRIC DETERMINATION OF STEROLS IN WOOL FAT** by Blake F. Putney and Robert Calvo (Rutgers Univ., College of Pharmacy, Newark 4, N. J.). Irregularities encountered in the application of the Liebermann-Burchard reaction to the determination of cholesterol, isoocholesterol and their esters in wool fat unsaponifiables and wool fat have been investigated. Times and temperatures of color formation have been found critical in the determination of absorptivities and their analytical application. A satisfactory analytical procedure has been developed. *J. Am. Pharm. Assoc., Sci. Ed.*, 48, 205-210 (1958).

**FLAVORING MATERIAL.** C. W. McMath (The Buckeye Cellulose Corp.). U. S. 2,785,983. The preparation is described of a stable non-caking solid seasoning in the form of small friable grains. Between 0.5 and 25% of an extract of a pungent aromatic spice is dissolved in a molten hard fat, having a melting point of 120° to 200°F. The mixture is spray cooled to form grains melting above 115°F. Thru *J.A.O.C.* 34, 258 (1957).

**EXCESSIVE UNDERARM PERSPIRATION.** This problem appears to have no satisfactory solution at present. The proprietary antiperspirants are really quite good, on the whole, and a try of a variety of them is worthwhile. A 10% formaldehyde solution in rubbing alcohol might be tolerable and efficacious; however, it irritates some persons, especially blonds, and its odor is objectionable. Some dermatologist (not all) will countenance x-ray therapy in doses of 300 r at about 120 kv. without added filtration at intervals of two weeks until a total of dose of 1,800 r may be reached; this consultant does not recommend it. Phenobarbital is to be considered for occasional use. Thru *J.A.M.A.*, June 28, 1958, 1194.

**EFFECT OF ANTIOXIDANTS ON THE STABILITY OF ORANGE OIL.** W. M. Gearhart, B. N. Stuckey and E. R. Sherwin (Eastman Chem. Prod., Inc., Kingsport, Tenn.). *Food Tech.* 11, 260-1 (1957). It is shown that BHA or BHT can effectively stabilize the autoxidation of D-limonene and orange oil with the BHA showing slightly better results than the BHT. An active oxygen method, run at a temperature of 65°, was used as a rapid test for determining the stability of orange oil, the end point being 20 meq. of peroxide per kg. of oil. The critical peroxide value for the end of the induction period of orange oil is 40 meq. per kg. of oil. Thru *J. Am. Oil Chem. Soc.*, 34, 370 (1957).

**TRAGACANTH SOLUTIONS I. THE RELATION OF METHOD OF PREPARATION TO THE VISCOSITY AND STABILITY,** by Gerhard Levy and T. W. Schwarz, Univ. Buffalo School of Pharm., Buffalo 14, N. Y. Various factors which influence the viscosity of tragacanth solutions are discussed. The effects of homogenization and heat on solutions of the gum are reported. The degree of initial hydration of the gum is related to the viscosity changes that occur during aging. This viscosity may first increase and then decrease, or it may solely decrease. Studies of the viscosity changes that occur over relatively long periods of time show that the magnitude of such changes may be predicted by methods which are outlined in this paper. Thru *J. Am. Pharm. Assoc., Sci. Ed.*, 47, 451 (1958).

# Lined Polyethylene Bottles

J. H. PARLIMAN\*

We published our first polyethylene liquid permeation data in 1948 and for the following 7 years or so we found that approximately  $\frac{1}{3}$  of the products submitted for packaging in our plastic containers could not even be considered because of permeation or associated problems, while another third were in the questionable category. Thus, the remaining one-third represented the products around which our bottle sales had to be centered. With these odds, it meant a great deal of testing, evaluation and foot work to interest a customer in polyethylene containers. For not only did we have the normal cost, delivery, design and function problems to handle, but the customer's product had to be a packagable liquid. And for a technical service engineer this problem of permeation was a very real obstacle to progress.

But now we do have bottle linings and, together with some of the new bottle materials, we can handle an appreciable percentage of the products considered for polyethylene packaging.

This discussion deals only with those linings applied to the inner surface of polyethylene bottles. Linings are formulated from various polymeric materials and applied to the entire inner bottle surface, right up to the neck bead, forming an inseparable part of the bottle wall. Because of patent restrictions, I am unable to disclose much information as to the nature of these linings, or any data on the method of their application.

These internal bottle linings act as a barrier to prevent a liquid from coming in contact with the polyethylene bottle wall and thereby reduce liquid permeation.

The various polymeric materials have vastly different permeation properties. We can use cellulose acetate and polyethylene as a somewhat over-simplified example. Polyethylene is a very good barrier for water while cellulose acetate is a particularly poor water barrier. Conversely, acetate has very low permeation properties for the aliphatics such as kerosene, while this liquid swells and permeates polyethylene at a very high rate. Thus, in theory at least, we could place a lining of cellulose acetate in a polyethylene bottle and thereby package both water and kerosene in the container. However, in practice, it's not quite this simple. The linings have to be specially formulated to provide a variety of specific properties, such as proper adhesion to the bottle, suitable mechanical and processing properties as well as imparting the desired chemical resistance and permeation properties.

## No Universal Liner

We have not found any "universal" liner to handle the great variety of liquids considered for polyethylene bottle packaging. A number of different liners are required. However, this is no different from the situation found with closure liners and flexible films. And I must admit that although linings can now successfully handle a wide variety of liquids, there are a number of liquids

for which better liners must be developed.

It is frequently a matter of degree as to whether a liner can be regarded as successful or not. In the majority of cases, we can lower permeation appreciably with a lining. But only the commercial acceptance of the lining by our customer will indicate whether the permeation has been sufficiently lowered. For instance, we can point with pride to the fact that one of our linings will reduce the permeation of carbon tetrachloride by a factor of over 160 to 1. That is, the ratio of permeation rates for unlined to lined bottles is over 160. However, with this improvement, we still end up with a weight loss of about 5%/year at room temp. for a 4 ounce bottle and this would not be acceptable to most carbon tet packagers.

## Present Commercial End Uses

I could, at this point, go into a detailed discussion of the various types of liquids which can be successfully handled by linings. However, this involves more chemistry and time than would be suitable, and instead, I think it would be of more interest to show some samples of commercial end uses and explain very briefly the reason for the lining in each case.

1. The liquid dentifrice bottle utilizes a liner to retain an important flavor ingredient—methyl salicate.
2. The lining in the shampoo bottle is used to hold the perfume—very important for a product of this type.
3. In the case of after shave lotion, the lining again is used to retain perfume. But it is a somewhat different problem from the shampoo. With this type product, we are especially interested in a barrier for the "top-notes"—often found in the citrus oils.
4. Veterinary products contain appreciable percentages of aliphatic hydrocarbon solvents which permeate very rapidly through an unlined polyethylene bottle. And not only is permeation high with this type molecule, but it tends to swell the inner surface of an unlined bottle more than the outer surface and the result is a sidewall distortion.
5. Sidewall distortion is also found, for instance, with mineral oil products and water-in-oil base emulsions. Two bottles contain a mineral oil base baby oil. The unlined bottle is greasy on the outer surface, it shows the distortion, and the perfume odor can be detected on the outside of the bottle. This lining very nicely handles all three problems. The examples shown, incidentally, are merely test bottles and not commercial samples. The oils have been packaged for over 22 months.
6. A similar set of problems, although involving a vastly different product, is found with hair conditioner. The lining prevents oily surface, distortion, and lowers perfume permeation.
7. The suntan oil bottle is lined because of the oil content of the product. The problems are similar to those of the baby oil previously discussed.
8. Several pharmaceutical product bottles in which the liner is used to prevent permeation of one or more

\* Plax Corporation. Paper presented at the National Packaging Forum of the Packaging Institute, Chicago, October 13-15, 1958.

Slide #1—Permeation Data For Various Liquids

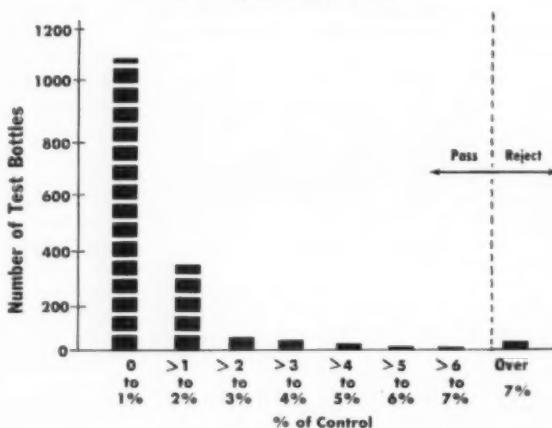
Test Liquid	Percentage Weight Loss/Year			
	73°F Epoxy Lined Bottles	Unlined Bottles	100°F Epoxy Lined Bottles	Unlined Bottles
1,1,1 trichloroethane	5.1	360.	14.	Very high
Kerosene	40.03	94	31	390.
Dipropylene Glycol	40.3	40.3	0.95	0.90
n-butyl ether	4.6	270	8.9	Very high
Dipentene	1.2	320	8.0	Very high

Slide #2—Permeation Data For Flavor and Odor Materials

Test Liquid	Percentage Weight Loss/Year			
	73°F Lined Bottles	Unlined Bottles	100°F Lined Bottles	Unlined Bottles
Oil of Bergamot	1.1	71	11	340
Oil of Spearmint	0.5	35	10	250
Oil of Thyme	0.8	50	11	240
Methyl Salicylate	0.4	28	3.0	130
Oil of Clove	40.2	2.7	1.7	35

Slide #3—Permeation Data For Commercial Products

Test Liquid	Percentage Weight Loss/Year			
	73°F Lined Bottles	Unlined Bottles	100°F Lined Bottles	Unlined Bottles
Suntan Oil - mineral oil base	0.11	0.25	0.46	1.5
Mouthwash - alcohol, water base	1.7	2.6	2.9	6.2
Insecticide - aliphatic hydrocarbon solvent	0.4	23.	1.9	180
Toothpaste - Normal viscosity	0.7	2.9	1.6	7.3
Gun Lubricating Oil	40.2	0.35	0.90	19.7

Slide #4—Frequency Distribution Bar Chart  
Functional Test—Lined Bottles

of the active medicinal ingredients were submitted. Obviously, in this type case we, as a bottle supplier, are limited in the evaluation of the liner efficiency and cannot assist the packager as much as we can with most of the other samples shown.

9. As to a preshave lotion, the liner has to perform several functions. In this case, it appreciably lowers perfume permeation, and also it prevents permeation of the lubricant, which will cause bottle greasiness on an unlined container.

#### Permeation Data

The subject of actual permeation rates for lined vs. unlined polyethylene containers could very easily involve much time; so I can only present examples of some typical permeation data which was selected from our laboratory files.

When a product is encountered which leads us to consider the use of linings, we usually try to screen through simple tests those thought to have some promise and then present the customer with the one or more linings which prove most suitable. We make no attempt to substitute for customer testing, for he is the only expert on his product and he must make the final decision as to whether or not the package is acceptable.

A typical screening test will usually involve checking of two or more liners in 4 ounce Boston Round Polyethylene bottles which are filled to the shoulder and stored in triplicate for 28 days in a 73° room and in 100° and 120° circulating air ovens. The bottles are weighed to 1 milligram weekly and are examined closely during the test. The percentage of product weight loss (or, in some cases, gain) per year is then calculated. We rely mostly on 73° and 100° testing for permeation data and use 120° more for accelerated physical effects such as greasiness or sidewall distortion.

#### Common Liquids

Here we compare 4 ounce Boston Round Epoxy lined vs. unlined permeation data for a few common liquids. The polyethylene had a density of 0.920 and bottle weight was about 16 1/4 gram. Phenolic closures with homogeneous .050" polyethylene liners were used.

This particular liner is very effective for the trichloroethane, kerosene, n-butyl ether and dipentene with unlined to lined 73° ratios of 59 to 260. However, the liner has no measurable effect on the dipropylene glycol, which happens to be a slow permeator anyway.

In the cases of the trichloroethane, butyl ether and dipentene, the permeation is very fast in unlined bottles at 100°F and accurate permeation data is difficult to obtain. Therefore, we have merely used the words "very high" in this slide.

#### Essential Oils

This data compares lined and unlined bottles with some common essential oils. In this case, we used 1 1/4 ounce oval test bottles. The data was obtained from general flavor and odor permeation studies. The ratios of unlined to lined bottle permeation rates vary from about 62 to 70 at 73°F. At 100°F the ratios range from about 21 to 43. All items except the oil of clove have products tested in 4 ounce Boston Round bottles.

#### Commercial Products

Here we show permeation data for some commercial products tested in 4 ounce Boston Round bottles.

The suntan oil has a low permeation rate in unlined bottles, and the lining still further reduces it. Its function here is threefold: (1) eliminate greasy bottle outer surface, (2) prevent bottle distortion, (3) reduce product odor loss. In this instance, the lining very nicely solves all three problems.

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### LANVIN—1

Lanvin Parfums has a new aerosol container designed by Cartier and produced by Scovill Manufacturing Co. The container will deliver three ounces of toilet water through an unmetered valve. The cap and base of the container are golden polished brass with fluted sides and Lanvin's trademark is debossed on the top of the cap. The center section is polished black anodized aluminum.

### DUBARRY—2

DuBarry presents Royal Velvet Make-up and Cloudsilk Pearled Powder, a \$5.50 value which for a limited time will sell for \$3.50 plus tax. In three complexion shades. On sale January 1.

### LEHN & FINK—3

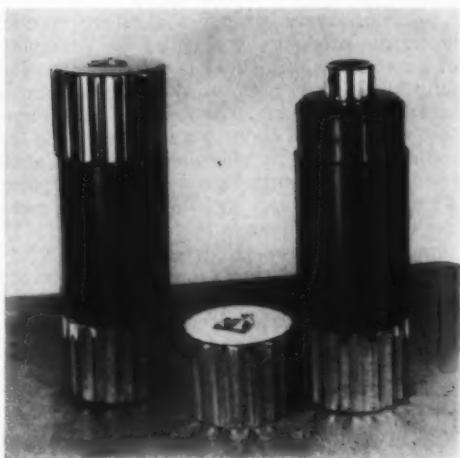
Rolit 2 in 1, a unique idea in the roll-on deodorant field which incorporates an applicator for "Her" and one for "Him" at opposite ends of the container, has been introduced by Lehn and Fink Products Corp. One end of the unbreakable plastic container is light pink and the other is blue. The blue and white carton also features profiles of a young lady and young man.

### HELENA RUBINSTEIN—4

Helena Rubinstein, Inc. is now selling its Heaven Sent fragrances in newly designed cartons that picture airy cloud effects to reinforce the suggestion of the brand name. A splatter technique provides a sky-like background of four colors, printed in a fine bronze gold with a dull finish. The brand name is imprinted in white on a band of cerulean blue, fringed with bronze.

### STANLEY HOME PRODUCTS—5

The entry of Stanley Home Products, Inc., in the rapidly growing field of purse-size aerosol spray perfumes, is this 3-inch anodized aluminum container with a metallic blue-green finish and white silk screen lettering. It features a metered valve and holds from 250 to 300 sprays.



1.

## NEW PACKAGING



2.



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5.

In many cases, linings are rather specifically aimed at certain product components. For example, in the case of a mouthwash, the liner is quite efficient for the flavorants but it does not retard the water and alcohol permeation appreciably. The result is only a modest weight loss reduction. Weight loss in this case is only a partial indication of lining efficiency. The final answer regarding lining suitability here will lie in customer odor tests. As a supplier of the package, we might merely forward the weight loss data to the customer with the comment that we detect product odor on the outside of the unlined bottles only; and that from elevated temperature testing, we find appreciably better odor characteristics of product with the lined containers. This liner does an excellent job of reducing loss of the rather high percentage of flavorants.

The insecticide represents an entirely different problem. The active ingredients do not present a permeation problem but the hydrocarbon solvent permeates at an excessive rate and causes obvious bottle distortion even at room temperature. The lining reduces the solvent permeation by a factor of 57 to 1, and eliminates sidewall collapse.

Included is toothpaste as an example of a highly flavored, very viscous product. The particular toothpaste shown is normally packaged in metal tubes. Most of the improvement in weight loss is in the flavor components.

The gun lubricating oil is a high grade product which has low permeation rates in unlined bottles. The lining prevents sidewall distortion and eventual bottle greasiness.

#### Quality and Testing:

Once a customer has tested and approved a specific lining for a given product, he then usually raises the question of inspection methods for the lining and he wants assurance of lining quality. The linings usually vary from clear to light straw in color, and since most of the bottles are blown from colored polyethylenes, visual inspection methods proved crude and destructive at best. Inspection of the liner by a weight method is not practical because the bottle weight tolerance is typically of the same order as the total lining weight. And even if such a method were practical, the result would only indicate whether or not we had put the proper weight of lining in the bottle. It would not indicate whether the lining properly covered the inner walls of the bottle.

Measurement of actual film thickness is difficult and did not prove to be an acceptable method.

I must say that the development of proper tests for the control of the lining processes in our plants and final assurance of quality control proved to be a long and difficult problem. We finally came to the conclusion that the only truly meaningful test had to measure the function of the liner. The use of a liner is to retard permeation and we therefore established permeation tests which vary according to the particular liner involved. You will note that there is very little in common when comparing liners used in metal tubes vs. polyethylene bottle liners. In the case of metal tubes, the prime function of the liner is to provide chemical resistance, whereas we are interested in retarding permeation.

The details of the functional test, employed in each of the manufacturing plants, for one lining, is as follows:

Lined bottles are filled to the shoulder level with a trichloroethane product and capped tightly. Twenty percent of the bottles are tested in an inverted position. The bottles are weighed to  $\pm 0.1$  gram and conditioned

in a circulating air oven at 120°F for 24 hours. Three unlined control bottles from each sub-lot are similarly filled and conditioned.

The lined and unlined test bottles are removed from the oven, allowed to return to room temperature and then reweighed. The weight loss of the lined bottle should not exceed 7% of the average weight loss of the three unlined control bottles. Any individual bottle that shows higher than this 7% weight loss is considered a reject.

What we are doing here is selecting a test liquid with a high permeation rate and further accelerating the permeation by raising the test temp. to 120°F. Thus, we can and do use an actual permeation test as a production line control method.

It is obvious that the sampling method used for selection of test bottles is most important. We use the normal inspection tables from MIL-Std. 105A as the basis for our selection plan. The % defective bottles, using the 7% level already discussed, must not exceed a 1% acceptance quality level, (AQL).

A specific example from a commercial production run will probably best illustrate the production control used. Lot size in this instance is 21,000 bottles. Sample size is 300 pieces. Using the 105A specification at a 1% AQL, 7 rejects from the 300 test bottles are acceptable. 8 pieces which do not pass the 7% permeation test constitutes rejection. This lot consists of 50 cases and thus we are permeation testing 6 bottles from each case. The cases are consecutively numbered. With this sequential random selection method of in-process control, we can isolate bottles of questionable quality.

#### Test Results

Here we show the test results of 5 lots, (about 105,000 pieces), of the bottle in question. This bar chart gives the frequency distribution for the approximate 1,500 samples involved.

The first bar, for instance, indicates that there were 1,056 lined test bottles which had permeation weight losses ranging between zero and 1% of the unlined control bottle weight losses.

In view of the fact that we are aiming for zero weight losses, we do not obtain a "normal distribution" here.

In order to present a readable slide, I used only 8 cells. However, if more cells had been used, the mode would probably be between  $\frac{1}{2}$  and  $1\frac{1}{2}$ %.

In these 5 lots, the maximum number of rejects would be 35 pieces. Actually, we found only 21 rejects—samples which showed a weight loss of 7% or more, as compared to the unlined controls.

#### Commercial Limits

As with most commercial processes, we have certain limitations on bottles which can be lined. Actually, however, our limitations are not particularly severe. We can commercially line bottles ranging from somewhat under 1 ounce capacity to 16 ounce, and in some cases, a little over 16 ounce capacity. Bottle neck finishes from 15 mm to 24 mm or sometimes larger are lineable.

We can line bottle shapes from all of our common stock bottle families as Boston Round, Cylinder, Oval, etc., and have commercially lined most of these stock shapes.

It is very difficult to generalize as to whether or not a custom shape bottle can be commercially lined. Each such design must be considered individually. However, one rule-of-the-thumb does have rather general application. A bottle shape which can be economically blown and easily processed down a filling line will normally be commercially lineable.





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With its modest price, ROSOTTO SAVON opens a new field for manufacturers desiring a "natural" rose effect.

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Warren Godfrey enjoys a story by Edwin D. Morgan while William Markland looks on



Maurice Meunier, recently honored in a citation signed by Gen. deGaulle of France, and Mrs. Meunier were among those at the reception



Eric Vies, M. G. deNavarre and Sabbat Strianse Discuss SCC Tour



Ray Hogan, Mr. and Mrs. Herbert Perry and Mr. and Mrs. Ben Perry at the Reception



Mr. and Mrs. Walter Wynne, Mrs. Kramer and Robert Kramer and Miss Florence Wall

## From 12 to 700 Members in 14 Years

The Society of Cosmetic Chemists which has grown from a membership of 12 to over 700 in the 14 years of its useful life held its annual meeting in new and larger quarters in the Statler Hilton hotel, New York City, November 20. As usual it was well attended and seven papers of pertinent interest were presented by experts at the business sessions.

This year there was no medalist award. Instead at the luncheon President James H. Baker gave an interesting talk on the birth and growth of the Society and its increasing ramifications abroad. He also reported on the second European trip which was taken by 41 members from the American Society; and announced a conference to be held in London, England, April 15, 16 and 17, 1959.

### New Officers

Savery F. Coneybear is the president for 1959; and the new officers elected for 1959 are: President-elect, Herman J. Amsterdam; Secretary, Robert A. Kramer; Treasurer, Lester I. Conrad; and Directors: Miss Sophie L. Plechner and Stillman R. Goff.

In the evening the day's activities came to a close with the ever popular banquet and dance. The complete success of the meeting was due largely to the work of Dr. Richard K. Lehne, program chairman; Walter Wynne, arrangements committee chairman and secretary Robert A. Kramer.

Abstracts of the papers read at the technical sessions follow.

### Aromatic Fluorine Compounds

Fluorine is the most reactive and electronegative element known, and wears the royal crown of the halogen family. These attributes have a profound effect on the properties of its compounds. Therefore, the organic



Mr. and Mrs. John Hancock have a chat with Dr. Ernest Guenther



Mr. and Mrs. Irving Colbert, Ex-President and Mrs. James Baker and Miss Florence Wall



Gustav Carsch, Mrs. Wetterhahn, Julius Wetterhahn and Mrs. Gustav Carsch



Harry Bennett, Eric Vies, Mr. and Mrs. John Garazio and Mr. and Mrs. Amsterdam



Mr. and Mrs. Don Bush enjoy a friendly chat with Mrs. Bettie Stanton



Gabriel Barnett, Mrs. Bouillette, President Savery Coneybear and Pierre Bouillette



Everett Alexander, Martin Rieger, Mr. and Mrs. C. Wight and Mr. and Mrs. Bob Cook



Dr. and Mrs. Henry Kreider, Mr. and Mrs. Edward Morrise and Ivar H. Budd



Mr. and Mrs. G. Ammersbach, Mrs. E. D. Morgan, Miss M. Jones and Norman Jones



Norman Gallagher, Dr. Arthur L. Fox, I. H. Budd and Ivar Malmstrom

fluorine chemist expects the normal, unusual, and extreme.

The first aromatic fluorine compound, benzoyl fluoride, was synthesized in 1863 by Boredin, the genius composer of *Prince Igor*. In 1870 fluorobenzoic acid was reported as the first ring fluorine compound. No aromatic fluorides achieved commercial stature until the early 1930's when some brilliant fluorine-containing dyes were announced. Yet, in spite of almost a century of history, much spade work still needs to be done with simple basic compounds. For trail-blazing research, aromatic fluoroheterocyclics are virgin territory.

Fluorine is introduced conveniently into the aromatic nucleus by 1) the Schiemann synthesis, and 2) the aryl halide-potassium fluoride exchange reaction. The first method is based on the thermal decomposition of a diazonium fluoroborate to the aryl fluoride. The exchange reaction is essentially a replacement of chlorine by fluorine in an activated aryl chloride. If side-chain fluorine is desired, the Swarts reaction is the standard.

Some general effects of fluorine substitution for hydrogen on physical properties are: very little change in boiling point; decreased surface tension, index of refraction, and heat of vaporization; and increased vapor pressure. Fluorine may modify the effects of other groups in the molecule quite differently than the other halogens. Odor may become more pronounced or pleasantly blended, or even completely lost.

For the most part, aryl fluorides are more stable than their halogen analogs. On the other hand, extreme fluorine lability, as in 2,4-dinitrofluorobenzene, has been found to be very useful. An outstanding feature of ring

fluorine is that it does not usually interfere with other group introductions or adversely modify characteristic group reactions.

Toxicity data are woefully lacking. Scattered studies on simple fluorobenzene derivatives indicate some compounds to be more toxic and others less than the chloro analogs. As early as 1883 an Italian chemist synthesized fluorohippuric acids by feeding dogs the corresponding fluorobenzoic acids. Some very interesting data are becoming available from research with fluorinated cortisones, tranquilizers, anticancer agents, fungicides, herbicides, insecticides, and fish species controllers.

In conclusion, aromatic fluorine chemistry challenges the imagination of the chemist to create new and exciting products through skillful blending of unique and superb properties.—Abstract of SCC Paper by G. C. Finger.

#### Rheology Related to Suspension

The effect of gravity on suspensions or emulsions has long resulted in the general problem of sedimentation of solids and phase separation in emulsions. Because of an inability to cope with this handicap, many cosmetic products have failed at some stage of commercial development. The problem has been a difficult one to study since these systems are affected severely by pigment flocculation, particle size, and coalescence. These complicating factors are most evident in fine particle size dispersions.

The objective of this paper is to introduce a new mechanism for obtaining permanent suspension. This mechanism involves the rheology of the water phase of

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As the only publication devoted exclusively to the cosmetic industry, the American Perfumer and Aromatics has long been attracting and holding to its editorial pages people of identical interests, occupation and devotion.

If it has an application to improving the production, or the quality or packaging of cosmetics, it best be advertised in the American Perfumer and Aromatics.

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the system. It will be shown that permanent suspension results when the water phase exhibits a critical minimum yield value irrespective of the apparent viscosity. To avoid complications such as flocculation, this study employs the suspension of large sized inert particles such as sand, marbles and golf balls.

The calculated minimum force/unit area necessary to permanently suspend these materials is shown to be very closely related in actual experience to the physical measurement of yield value with the Brookfield Viscometer.

Yield Value is associated with "plastic" flow behavior. This is shown to be a very rare occurrence in "solutions" of the most widely used natural and synthetic gums. Of all of the polymer "solutions" evaluated, Carbopol 934 is unique in exhibiting high yield value at low concentrations.

The application of this mechanism to specific formulations where the complicating flocculation effects do exist is also demonstrated by several application studies. —Abstract of S.C.C. paper by L. Cohen and R. J. Meyer.

#### Hair Coloring

Many classical precepts of hair dye formulation are currently deliberately being violated in the search for new advertising claims, new forms of product application, and more foolproof products. The trend toward more home applications inevitably has pushed the development of "full intensity rinses"—combining the ease of removal of color rinses with the shade intensity of permanent dyes.

Some of the factors controlling the performance of hair dyes are discussed in detail, especially those factors which help realize the new effects wanted. They include:

1. The sensitivity of various dye solutions to pH.
2. Some unexpected benefits from the use of sequestreants.
3. The effect of the partition ratio of certain dyes between solvents and water solutions.
4. The use of gums and hair "conditioners."
5. The most striking new trend in hair dyes in recent years—the use of anion-cation color complexes as the principal method of achieving the full intensity rinse.

An attempt is made to visualize the "normal customer," whose hair is likely to be far from normal due to damage from various cosmetic and other willful treatments.—Abstract of S.C.C. paper by Robert L. Goldemberg.

#### Therapeutic Potentialities of Triglycerides

The fungistatic potential of certain triglycerides was observed while doing research on the hydrolysis of fats and the oxidation of fatty acids by *Penicillium roqueforti*. In the laboratory, glycerol triacetate and some of the glycerides of higher fatty acids have rather broad spectra of antifungal activity but in practical situations they are not very effective against the saprophytic fungi. In contrast, even the earliest clinical tests with formulations of glycerol triacetate were effective in treating skin infections caused by the superficial dermatophytes.

The fungistatic triglycerides seem to inhibit the fungi by first being hydrolyzed with the liberation of the free fatty acids. As the fatty acids accumulate the pH decreases, and with decreasing pH the fatty acids become increasingly fungistatic. The hydrolysis of the triglycerides is enzymatic, being catalyzed by the rather ubiquitous esterases or lipases. These esterases are produced in modest amounts by the dermatophytes and are

passed into the medium in which the cells are growing; they are abundant in blood serum and in skin. As a whole the esterases hydrolyze glycerol triacetate most rapidly about a rather neutral pH with the rate becoming vanishingly small in the area of pH 3.5 to 4.0.

In the laboratory the growth of dermatophytes is inhibited by incorporating 0.1 to 0.25 per cent glycerol triacetate into the medium. When serum as a source of esterase is added the fungistatic activity of the triglyceride is enhanced. It has been impossible to develop resistance to glycerol triacetate. The growth of bacteria can be inhibited by a medium saturated with glycerol triacetate provided a source of esterase is supplied. Inhibition of bacterial growth may be merely a matter of the pH becoming too low.

Glycerol triacetate has a very low order of systemic, oral, ocular and dermal toxicity and is non-sensitizing. Besides its use as a treatment for superficial mycoses it may be of value wherever it is desirable to maintain a low pH on the skin or in body cavities.—Abstract of S.C.C. paper by S. G. Knight.

#### Polyethylene Bottles

High density polyethylene resins prepared by the low pressure process offer opportunities for new packaging applications in the cosmetic, pharmaceutical and chemical specialty fields. Bottles manufactured from these resins exhibit lower permeability than the conventional polyethylene squeeze bottles and better resistance to grease and oils. They can be sterilized by normal autoclave methods. The greater rigidity of the high density polyethylenes allows the use of lighter bottle weights for certain end uses and therefore a more economical package. High rigidity is also of advantage in producing an improved plastic jar. Bottle test procedures are described and test data are included.—Abstract of S.C.C. paper by E. J. Temple.

#### Fluid Mixing of Cosmetic Formulations

Fluid mixing is an important part of cosmetic manufacture. The process design of fluid mixers must consider the requirements of various mixing processes.

The process design of fluid mixers includes such topics as flow patterns, typical mixing impellers, and the requirements of various mixing processes.

The role of impeller pumping capacity and fluid shear on the mixing system will be discussed for several types of processes, such as blending, liquid-liquid contacting, solid-liquid contacting and heat transfer.

Reference will be made to specific applications in cosmetic manufacture in illustrating the basic principles of fluid mixing.—Abstract of S.C.C. paper by Dr. James Y. Oldshue.

#### Dental Caries Control

The mechanism of the development of the carious lesion and the known methods of caries control are reviewed. On the basis of anomalies in both the theory and the results of caries control experiments, it is suggested that factors not ordinarily recognized may be operative.

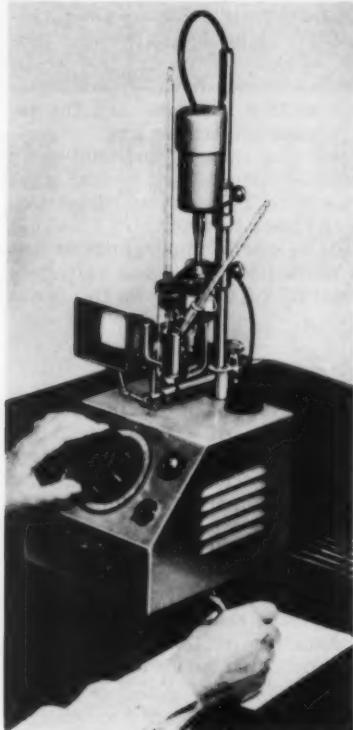
On the basis of the factors that govern the permeability of the tooth and dental plaque the characteristics of a therapeutic mouth wash or dentifrice are discussed. It is also suggested that by the use of oral preparations the permeability of the tooth may be rapidly decreased to the point that caries activity might be materially reduced.—Abstract of S.C.C. paper by L. S. Fosdick.



## PRODUCTS & IDEAS

### MELTING POINT APPARATUS—1

A new melting point apparatus is available from Arthur S. LaPine and Co. According to the firm, heating is rapid to within 5 or 10 degrees of the melting point and further temperature increases can then be reduced to 1 or 2 degrees per minute. A magnifying lens in a holder, articulated for easy adjustment, affords convenient observation of the measuring zone. Two small lamps throw light from both sides onto the test substance. Three standard 3 inch capillary melting point tubes can be inserted in the small Pyrex glass vessel. It requires only 40 ml of the silicone oil heating medium, and the immersion heating coil weighs only 0.5 grams. Therefore, according to the firm, temperature response to heating voltage is practically instantaneous. At the back of the cabinet is a connector with a stop-cock for supplying compressed air to the cooling device.



1.



2.

### SIGHT GLASS INDICATORS—2

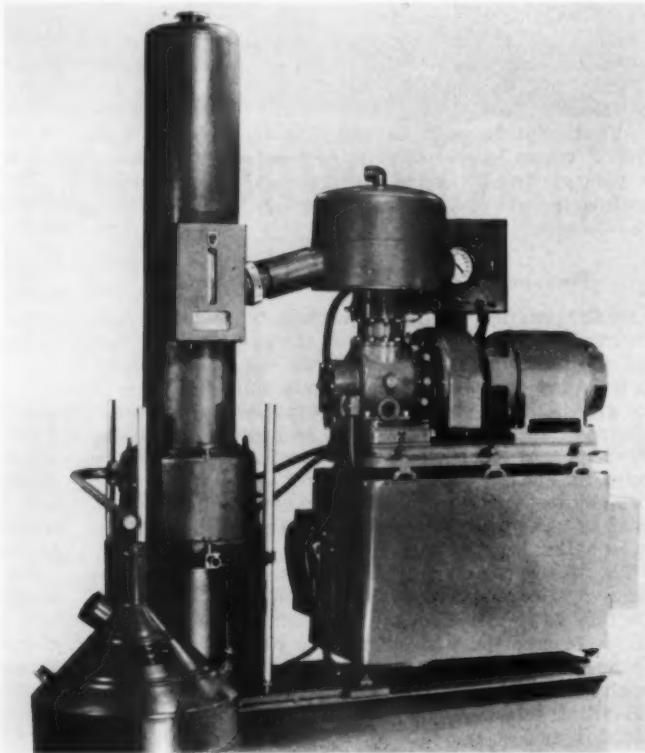
OPW-Jordan's monel Visi-Flo Sight Glass Indicators are now available from stock. They are used wherever it is necessary to know what's happening inside a pipe. Visi-Flos indicate direction, rate of flow, viscosity, color, clarity and purity of product. Style 444, shown here, is available in  $\frac{1}{4}$ " through 2" sizes. According to the manufacturer, Monel Visi-Flos are suitable

for pressures to 125 psi and temperatures to 225°F.

### LIQUID NITROGEN GENERATOR—3

A new Norelco Liquid Nitrogen Generator which is compact and capable of producing better than 4 liters of 99.5% pure liquid nitrogen per hour, has been announced by the Instruments Division, Philips Electronics, Inc. The nitrogen generator has no moving parts and is designed with a single atmosphere separation column. The Norelco gas liquefier is employed as a nitrogen condenser and the two units provide a completely integrated and self-contained system. Eleven safety devices assure nitrogen purity and safe operation. The generator is powered by a 10 horsepower, three-phase motor. A water supply of 240 gallons per hour is required for the gas liquefier.

3.





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Representatives of the Society of Cosmetic Chemists at a cocktail party given in Milan, Italy by Martini and Rossi on September 8th, 1958.

## Seminar in Bonn a Feature of SCC Tour

Saturday (8:30 a.m.) saw the opening of the scientific seminar in Auditorium No. 9 at the University of Bonn. Our thoughtful German friends had set up a translator's booth. Papers given in German would be picked up on portable radio sets with earphones, in English and vice versa.

After the playing of Beethoven's "Andante cantabile—Allegro, op. 18, Nr. 5," by the Kirchenmaier Quartett and a formal welcome from the Mayor of Bonn, Dr. L. Masch president of the German Society, in turn warmly greeted all those present from the seventeen countries represented. Officially he addressed the group on the evolution of cosmetic chemistry and the standing of the German Society of Cosmetic Chemists.

The following scientific papers were given that day: Dr. H. Freytag—"The Definition of and Scientific Problems with Scientific Cosmetics"

Prof. Dr. A. Schöberl and Dr. H. Gräfje—"The Bisulfide Exchange Reactions of High and Low Molecular Weight Compounds"

Prof. Dr. A. Schöberl and G. Bauer—"A Novel Type of Crosslinking Reactions of Hair Keratin Transformations with Bunte Salts"

Dr. H. Freytag—"An Alcohol Soluble Nitrogen Compound in Human Hair"

S. Preisinger—"Microscopic Studies of Hair Dyeing (with Movie Film)"

J. Nüsslein—"Characteristics of Synthetic Phosphoric Acid Derivatives for Use in Skin Preparations"

Dr. G. Lietz—"Ideas and Findings Concerning Emolliency and Percutaneous Action of Cosmetics"



L to R, E. Thomsen, Dr. N. Hjorth, Mrs. R. Marriott, Dr. R. Marriott, Mrs. N. Hjorth, M. G. de Navarre and NIMB in Tivoli

Dr. D. H. Powers—"The Effect of Emulsions and Creams on Stratum Corneum"

Dr. O. Jacobi—"What Happens with Cosmetic Creams, Lotions and Oils on the Skin"

The discussion of the various papers took place at the end of the day's presentations. It would have been better to hold them immediately after each speaker finished. Now a rush for a cab to prepare for the special semi-formal banquet to be held up on the mountain at the Petersberg.

At about 7:45 p.m., the group "living" in the city and members of the German S. C. C., and their wives arrived



Mr. and Mrs. J. Meihuizen at Amersfoort



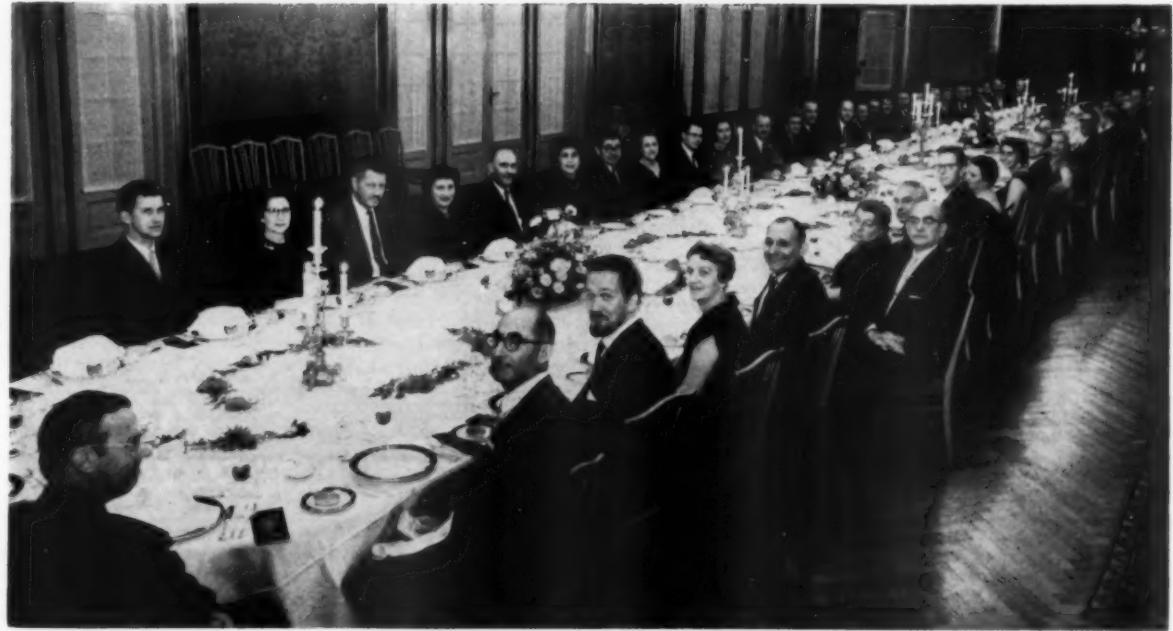
The group at "Esperis", Milan



At the Banquet at Hotel De Witte, Amersfoort



Lucille and Bob Kramer in Cologne, with the great cathedral in the background



Banquet of the Dansk Kosmetik-Kemisk Selskab at NIMB in Tivoli, Copenhagen



*Amelia Thorpe* *Joe Gleane*  
W<sup>m</sup> Lambert John H. Muller  
Arthur Vander Shaw Walter M. Bone  
Robert Sanford Mary Harris



Boy Scouts playing fanfare on the Lure after presentation of Honorary Membership scroll by John Lindeklide to Mr. G. de Navarre at NIMB in Tivoli. Seated left to right, Mr. C. Steffensen, Mrs. E. Thomassen and Mrs. C. Steffensen.

for cocktails before the banquet. We met still more people who were mostly new to us. A few I remember. There was Dr. H. Th. Schreus and his lady, he is a leading light of the German Society of Esthetic Medicine, sat at the same table with us; Dr. Hans Markert (Dehydag) and his lady—he sat at my right—what a lesson in Rhine versus Moselle wines I got from him; Dr. H. C. Freiderich and his lady, Dr. Alfred Hüthig, the publisher of *Parfümerie & Kosmetik* in Heidelberg. This was to be a long evening so things got underway promptly. Just to make you envious, feast your eyes on this menu: Kalter Salm, Cocktailsauce, Klare Ochsenschwanzsuppe mit alter Sherry, Mastkalbsrücken Bayonne, Spargelgemüse, gedämpfter Salat, Gnocchis Romaine, Cassata Rheinische Art, Mocca und Liqueure. The wines—a 1952 Kanzer Altenberg and a 1955 Winkeler Honigberg Riesling. The mocca—excellent!

Dr. Rovesti who was also seated at our table, Dr. Schreus and I carried on a voluble conversation on various world affairs in mixed languages. Mrs. Neugebauer sat in front of me. We had a fine opportunity to discuss their forthcoming holidays.

#### Appreciative Gift to German S.C.C.

Following a toast and a short welcoming speech by president Masch, (U. S.) S. C. C. president Baker presented a set of all the volumes of *The Journal of the Society of Cosmetic Chemists* bound in black and gold imprinted, to the German Society. Then, to president Masch a personal gift from the U. S. Society in appreciation of all his efforts in organizing the German S. C. C. and its seminar.

Floor entertainment was being well received. Near its end Drs. Hüthig, Freiderich and I went to our room for a nightcap. Saw our Canadians, the Quiggs briefly. . . . And the bus was going back to the city with the guests.

To an early Mass on Sunday at the famous Münster Cathedral (dating back to the 12th Century), so we could be at the Sternhotel by 10:00 a.m., to go by bus to Bingen, some 125 kilometers south. There were a few members of the German Society aboard.

En route to Bingen there was considerable Sunday

traffic. Worse yet, a U. S. military convoy closed some of the roads. We should have arrived at Bingen by noon. Instead it was around 2:00 p.m. The annual ten day wine festival was on. The parade was starting, too. Very colorful. Gigantic wine barrels on wheels. Beautiful horses. Pretty girls—the German says, "Wine must be old, and girls must be young." Bands and everybody seemed wined for the festival. After many pictures we started for our ultimate goal, the Castle of Klopp (Burg Klopp) atop a hill. Dr. Sophie Plechner jokingly pointed up to it, saying, "That's where we're going," and it was true. I felt so sorry for Mrs. Winarick climbing all the hundreds of stairs and the 25° angle of the pathways, she being a few years my senior. But she made it as easily as all of us. Lunch was almost finished for the other half of our group, mostly members and wives of the German Society. So we rushed through ours. Dr. Masch warned that our chartered boat would leave promptly at 4:00 p.m. At 3:45 p.m. we couldn't tell how to get down to the docks but finally made it. The parade was still on and the crowds thicker than before. We fought our way through it to the docks only to find our boat had just left. But there were about 25 or 30 of us—so the boat pulled into another pier.

#### Sights on Five-Hour Boat Trip

Let me mention a few of the things one sees on this five-hour boat trip. At Bingen you leave the juncture of the Nahe with the Rhine. Then the Mauseturm; the Rheinstein Castle (circa 1825); Die Pfalz (1326) whose builder once threw a chain across the Rhine and exacted tolls from all; Burg Katz; Burg Rheinfels (1250); the famed Lorelei where a gorgeous blonde caused shipwrecks; Liebenstein and Sterrenberg Castles; city of Boppard with its ancient Ursuline Convent (1125); Koblenz where the Mosel River empties into the Rhine; Remagen which figured so much in the last days of World War II, where only the pilings of the old bridge on each side of the river can be seen; Drachenfels (where the Siegfried saga originates); Petersberg where we stayed; Bad Godesberg and finally Bonn. The Rhine running north to south is terraced with vineyards on each side to get the

sunlight. Grapes are commercially grown on the banks of the Rhine from the slopes to Drachenfels to the Swiss border. These grapes make the various Rhine wines. The Mosel River, where grapes are also grown runs from east to southwest and originates in France. The grapes grown on its banks get a different sunlight exposure. As a result, these wines, I am told, are more dry than the Rhine wines.

The Rhine originating at the North Sea at Rotterdam, carries traffic all the way to Lake Constance near Basle, Switzerland. It is one of the world's longest commercial waterways.

Had long chats with Dr. Brun, Kurt Pfeiffer, the Gregorays and Bobbie Marriott—all about the respective Societies of Cosmetic Chemists. Bob Kramer introduced me to Karl Megerle (Wella) whose brother Eugene I had met several times at T. G. A. and S. C. C. meetings at home.

#### Honorary Memberships for U.S. Members

Dr. Paolo Rovesti announced that the Comitato Italiano di Estetica e Cosmetologia had made Sabbat Strianse, James Baker and Robert Kramer of our S. C. C. honorary members. He then told me that the Italian Dermato-Pharmacy group had made me an honorary member.

At dinner I was facing the small bar, watching the bartender open wine bottles. He sampled each bottle sold. We saw him a couple of hours later—he was so tranquilized he couldn't find the cognac in front of him. What a happy life he leads!

Jack Quigg (Parento), Lever's J. B. Wilkinson and I sat aft, sipping cognac and discussing the inactivation of preservatives by nonionics, the difference in wages between England, Canada and the United States (Wilkinson used a factor of 2.2 which I think is high) and the skyline as we passed towns in the darkness.

What a day! It was a trip none of us will forget, each for different reasons. Agfa and Kodak made out better than anyone from all the pictures and movies taken.

#### Second Scientific Session

Monday I cut the cab fare to the University because three of us, Hank van Ameringen, John Gilman, Jr. (Breck) and I managed to go down together. The second scientific session started at 8:30 a.m. with the following countries represented by the speakers: Germany, Holland, Czechoslovakia, Switzerland, France, Italy, United States and Hungary in that order. Isn't it amazing!

The following papers were presented:

Dr. E. Paukner—"Market Research and Successful Perfuming"

Dr. J. St. Jellinek—"The Physico-Chemical Behavior of Perfume Materials in Various Carriers"

Dr. K. H. Thomas—"The Pharmacology of Essential Oils"

Dr. H. C. Freiderich and Dr. Ph. Witjens—"Patch Testing of Perfume Materials on Human Subjects: New Findings"

Dr. V. Herout—"Prochamazulenes"

Dr. R. Brun—"Recent Studies on Perspiration"

Dr. J. Cotte—"Contribution to the Study of Some Tissue Extracts"

Dr. P. Rovesti—"The Action of the Cytamines from Cholesterol and Protein Hydrolysates on the Skin"

M. G. deNavarre—"The Inactivation of Preservatives by Nonionics" VIII

R. Blanke—"Possibilities of Objective Color Evaluation in Cosmetic Preparations"

I. Hajdu—"The Hardness Testing of Creams"

Dr. L. W. Masch and B. Ehring—"Temperature De-

pendant Viscosity Fluctuations of Soap Gels"

K. Röth—"Mathematical Methods in Cosmetics"

Dr. G. Everts—"On the Glass Tests of the DAB 6 (6th German Pharmacopoea)"

The session closed after 6:00 p.m. During the day the ladies took a tour to Linz for another wine festival. That night we dined with the Pickthalls and the Quiggs at the Bergischer Hof on the Münsterplatz, best in Bonn.

At the farewell party that night Swiss S. C. C. president Kurt Pfeiffer presented bouquets to the three German S. C. C. officers' wives. After the social, many thank yous to the various committee chairmen, officers and members and *au Wiedersehen* to our German S. C. C. friends.

Tuesday morning we paid up at the Petersberg, came down the mountain (\$15.00) to the Sternhotel, and at 10:00 a.m. our bus started to Dusseldorf, where we were guests of Dehydag. Enroute we stopped at Cologne for one hour to take pictures. We arrived at Dusseldorf right on time. We were ushered into the building by Mr. Lindner where I met Walter Neumann who calls on us in the States, Drs. Stark and Goette with whom I ate lunch.

After a quick wash up, sherry in the lobby, then a lunch of Herring Mayonnaise (made with apple and onion), consomme, roasted saddle of venison, cranberries, French beans and mushrooms, baked apple stuffed with red cabbage, creamed potatoes, Peach Kardinal, petits four, mocha with a 1953 Klusserather Bruderschaft (Moselle) and a 1953 Valchenberg Liebfrauemilch (Rhine). The venison was the best I ever tasted. We had generous "seconds."

#### Dehydag's Modern Factory

Dehydag's factory is modern in every way. Nurseries for children of working mothers. . . . Medical care. . . . Lovely dining rooms. . . . Bright working areas. It was interesting to ride in a special autobus around the factory grounds, see the brown coal used in the power plant, hydrogenation and catalytic plants, distillation and sulfonation. Dehydag was one of the two companies which developed sulfated fatty alcohols in the late 1920's. They are also the largest producers of packaged detergents through their Henkel subsidiary. Such consumer and commercial detergents as Persil, Imi, Wipp, Henko, Sil, Ata and others, are the many produced on high speed automatic machines with no detergent particles floating around in the air.

Since we were on our way to the airport stopping at the Dehydag plant en route, we left promptly to make our Scandinavian airline flight at 5:35 p.m. for Copenhagen. A parting gift was given to all the ladies. And now, good bye to Germany.

We arrived in Copenhagen in the rain about 7:45 p.m. Our bus took us directly to the Hotel Richmond where the Steffensens, Thomsens and the Petresches, the last two with their children, all representing the Dansk Kosmetik-Kemisk Selskab (Danish S. C. C.) were on hand to meet us. A pretty bouquet was given each lady by the children. After getting to our rooms and unpacking, we went to the Petresch home for a close family-type reception. Their daughter Anne and son Christian speak excellent English and did much to make us feel at home. There was quite a crowd because some of the Danes and most of our group were there, but it was a happy relaxation.

#### Seminar at Glyptoteket

Wednesday morning the seminar was held at the Glyptoteket, a famous restaurant with meeting rooms. Here we met more members of the Danish S. C. C. Four addresses comprised the seminar. First, a welcome



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from president Steffensen and a reply by U. S. president Baker. Then a paper on the world position of the Danish cosmetic industry by Erik Thomsen, followed by an address by "Connie" Steffensen on the raw materials produced in Denmark. Mr. Steffensen had prepared mimeographed material on this subject, listing materials by trade name, end use based on the system used in my *International Encyclopedia of Cosmetic Material Trade Names*, which was, indeed, very complimentary to me. In addition, there were samples of many of the specialties which interested a number of our people. Dr. H. Hjorth gave the final paper on allergies due to cosmetics.

Each paper was discussed as it was given, seminar style. All of us profited from this exchange of knowledge.

By now the ladies had returned from a tour of the craft centers, ride on the canals and the Cherry Heering factory, so we had lunch together. In Denmark it is beer as a national product. We had Tuborg and Carlsberg at our table. Either is tops.

In the afternoon, a tour of the old part of Copenhagen, including the Palace Square, Royal Opera House, Grundtvig's original modern church, the mermaid in the harbor, Parliament, Glyptothek, harbor and the shopping areas. Some got off at Jensen's as we did, others to the merchandise mart. Mrs. Ole Petresch came along with us, helping Jeanette make a choice at Jensen's silversmiths. The next stop was the Royal Copenhagen Porcelain factory, where we balanced international trade for the Danes. Everyone needs extra dishes, don't you know.

That night before the grand banquet a quick cocktail party took place at the Petresches where the Sam Prussins made arrangements to refurbish their new Eastern home with modern Danish furniture. (They really did it, too.) Then to Nimb in the Tivoli Gardens on the Bernstorffsgade. This private dining room was the most regal place in which I have ever dined. There was but one long oval table with candelabra. The walls in a rich, almost vermillion red with figures, gold leaf and mirrors. The picture doesn't do the room justice. You must see it to appreciate it. The service was almost mechanical in precision. Our menu follows: Sherry Manzanilla, Aspargessuppe, Sotungefilet Bonne Femme, Dyryryg, Gele Salat Waldorff, Frugtsalat, Mocca, Cognac. The wines were a Krone Rizling and a Chateau de Cadillac. Then a Madeira Henriques and Henriques.

#### Hand Lettered Scroll for S.C.C. Founder

President Baker presented the Mesdames Steffensen, Petresch and Thomsen with fruit bowls after thanking the Danish Society for their hospitality and many gestures of friendship. President Robert Marriott expressed the thanks of the British S. C. C. Then in came two boy scouts each with a large round "horn" which is called a Lure. They blew a fanfare that foretold an important event. As soon as the Lure players finished, Erik Thomsen made a short speech which I shall not repeat here—it was simply a grand surprise. The honorary membership that the Dansk Kosmetik-Kemisk Selskab gave me over a year ago was now complete with the presentation of a hand-lettered scroll. Again the Lure. For another one of the few times in my life, I was speechless. My deepest and most humble thanks to these friendly people.

Our coffee and likorer were served in a room below where an orchestra awaited any who would dance—and we did. At midnight we bade our Danish friends "farvel."

Thursday we left at noon for Amsterdam. Our group went on two different flights. We were in the first group. Imagine our surprise to find Dr. M. G. J. "Muus" Beets

and his wife Betty awaiting us. They drove us to Hilversum. What happy recollections of our previous visit with these charming people.

At Polak & Schwarz's plant the Pickthalls were on hand, along with Paul Schwarz, Mr. C. C. Brummer, managing director, P. H. van Roon, plant manager and S. R. Mansfield, director of the Enfield plant in England, among others.

Jack Pickthall and a group of others worked almost all night to have ready for us a representative display of the world's cosmetic products, arranged by type or use, all in separate show cases. This alone was worth a long trip.

#### Groundwork Laid for S.C.C. in Holland

Polak & Schwarz had also arranged for the arrival of a group of cosmetic chemists from all parts of Holland so we could meet each other and to lay the groundwork for a Society of Cosmetic Chemists in Holland.

The balance of our group arrived just before the Hollanders. They were greeted by Paul Schwarz to which president Baker replied with grateful thanks. Then tea and cake. Now a tour of the plant. I "enjoyed" the flavor department most. A black currant carbonated beverage, then a watermelon flavored jellied candy and finally a nut ice cream. Back at the main reception room, our second busload arrived in time for more tea and cake followed by group pictures. Then on the busses again to Hilversum and the modern "City Hall" with its new carillon tower. Burgomeister J. G. Boot greeted us in perfect English in a speech lasting about five minutes. S. C. C. president Baker replied on behalf of the tour group. The Burgomeister then moved among us so we could all meet and talk with him. It was a pleasant reception.

Back to the city—to claim our room: in the Grand Krasnapsky Hotel. A bit of confusion. Sab Striane had my bags in his room, but only he knew it—he wasn't in the room. In due course everything worked out.

Polak & Schwarz had bouquets of flowers and a beautifully bound book on Holland awaiting us in the room. This was indeed a surprise but a thoughtful one. Many thanks from us all.

Showered and were ready for the Lido party given by Helene Curtis' Joe Jordan.

To be concluded



"Your night-cream saved my marriage!"

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# News

## and Events

### **Voluntary Compliance to Regulatory Agencies a Hazard**

Voluntary compliance to a regulatory agency against unfair and disreputable tactics of a competitor is a business hazard according to the December Monthly Bulletin published by Di Cyan & Brown, New York City. "Whenever a firm makes such a complaint it reaffirms the inadequacy of voluntary compliance" the article points out. The statement is elaborated with examples wherein reputable firms are hurt when hit-and-run operators, striking for the quick haul with false claims, get the initiative in the market, overload the dealers, and make it difficult if not impossible for a reputable manufacturer to repair the damage done to him.

In contrast it is pointed out that remedy of abuses by governmental regulation offers a deterrent to inequitable business practices. "Being voluntary," the article concludes "compliance would essentially mean that those who wish would comply—and those who do not wish to comply capture the market." Regulation is a red signal in the mind of industry whereas voluntary compliance is invested with acceptable symbols. The article discusses the error of these notions and states that a reevaluation of these rigid concepts is to the advantage of industry.

### **Cardinal Products New Name of Vimark Laboratories**

Vimark Laboratories, 39 E. 20th St., New York 3, N. Y. has changed its name to Cardinal Products. Ted Robinson will continue to direct the affairs of the company.

### **European Aerosol Industry Moving Ahead Says Shepherd**

European aerosol companies material supply problems can prove a blessing according to H. R. Shepherd, president of Aerosol Techniques who has completed an extensive tour of pressure packaging centers in Europe and in England. "The necessity of overcoming the scarcity and expense factors has spurred the development of new methods which may prove an improvement over those in the United States" he said. He also observed that some manufacturers abroad show a readiness to use cheaper materials such as

propellents which are more hazardous than American standards require.

### **Salesmen's Assn. of Chemical Industry Holds Christmas Party**

The Salesmen's Assn. of the American Chemical Industry held its annual Christmas party "Winter Carnival" in the Waldorf Astoria hotel, New York City, December 17. Paul E. McCoy was chairman of the entertainment committee.

### **T. G. A. Scientists Mid Year Meeting Well Attended**

The 28th meeting of the Scientific Section of the Toilet Goods Assn. was held in the Waldorf Astoria hotel, New York City, December 8. The attendance was highly satisfactory and the following seven papers were presented:

"Measurement of Color Impressions" by Gabor B. Levy, Ph.D., Photovolt Corp.; "Contribution to the Problem of Possible Skin Irritations by Lipsticks" by Otto Jacobi, Kolmar Research Center, Wiesbaden, Germany; "Antiperspirant Testing: A Comparison of Two Methods" by E. W. Daley, The Procter & Gamble Co.; "Effects of Chronic Inhalation of Hair Sprays in Experimental Animals" by Dr. Joseph Calandra, Bio-Test Laboratories, Northbrook, Ill. "Alkyl Sulfates: Their Stability to Hydrolysis" by R. R. Read and W. G. Fredell, Warner-Lambert Research Institute; "Converting Laboratory Concepts to the Consumer Market" by Robert E. Spinner, Marketscope Research Co; and "Polyolefins as Packaging Materials for Toiletries with Special Reference to Polypropylene" by William O. Bracken, Hercules Powder Co.



Unveiling of Plaque to William G. Mennen, for 50 years President of the 80-year old Mennen Co. Vice President George Mennen, left, Jacob Manheimer center, Vice President William G. Mennen Jr. right. See note in Last Minute News

## FELTON SALES PERSONNEL MEET IN NEW YORK



Pictured are guests and personnel of Felton Domestic and Export Division during the recent sales meeting in New York

### Dr. Paolo Rovesti Wins Guiliana Brambilla Prize

The Guiliana Brambilla International Prize for Aesthetics and Cosmetology established by the Etablissements Laseron and Sebetay, in order to reward creative but disinterested activity of cosmetologists and aestheticians, was awarded for the year 1958 to Dr. Paolo Rovesti of Milan, president of the Italian



Dr. Paolo Rovesti

Cosmetology Society; president of the Italian Dermo-pharmacy Society and director of the laboratory for research in vegetable derivatives. Dr. Paolo Rovesti has published numerous scientific works concerning essential oils, vegetable tissue extracts, and raw materials for cosmetics. He contributed greatly to the development of cosmetology by training new students, who in turn published numerous scientific works.

The efforts and devotion of Dr. Rovesti with a view to international cooperation as well as the organization of the international convention of cosmetics and cosmetology of Venice in May, 1958, which was entirely the work of Dr. Rovesti, are thus recognized by the awarding of the Guiliana Brambilla prize.

### Morris Root Among Podbielniak Guest Lecturers

Morris Root, technical director of G. Barr & Co., will be one of the guest lecturers for the January, 1959 session of Podbielniak Institute in Chicago. He will describe the application of gas chromatography to the analysis of propellents used in aerosols. Special emphasis will be given sampling procedures, selection of columns and operating conditions.

### Chemical, Allied Industries Assn. Holds Christmas Party

The annual Christmas Party of the Chemical and Allied Industries Assn., was held December 13 in the Grand Ballroom of the Cadillac Hotel, Detroit, Michigan.

### Citrus Companies Complete Merger

The merger of Sunkist Growers, Inc., Exchange Lemon Products Co. and The Exchange Orange Products Co. has now been completed. Exchange Lemon Products Co. will now be known as Lemon Products Division, Sunkist Growers, Inc.

### Monsanto Chemical Co. Increases Vanillin Output

Monsanto Chemical Co. has completed a 25% expansion of its production capacity for vanillin in their Seattle, Washington plant. It is the third expansion of the company's vanillin production since 1955.

### Lanolin Plus Plans Million Dollar Campaign



Morton Edell

Morton Edell, president of Lanolin Plus, Inc., has announced that \$1 million would be spent in February, 1959, in a one-month, nation-wide sales campaign on Lanolin Plus Liquid. It will be the heaviest and most concentrated trade and consumer advertising program in the company's history. The million dollar campaign with the theme, "Look Younger Tomorrow," includes a one-month saturation advertising push via television, radio and national magazines, supported by extensive local newspaper space.

### Kartridg-Pak Machine Co. Buys Two Mojonnier Companies

Mojonnier Associates, Inc., manufacturers and distributors of aerosol filling machines, and the Mojonnier-Dawson Co., dairy equipment manufacturers, both of Franklin Park, Ill., have been purchased by the Kartridg-Pak Machine Co.

### Ad Essentials and Sales Aids Shows Scheduled

The seventh annual Advertising Essentials Show and the National Sales Aids Show are being combined into one all-encompassing show at the Biltmore Hotel, New York, March 30 through April 1.

### T.G.A. Issues Hexachlorophene Standard

The Board of Standards of The Toilet Goods Assn., Inc. has issued a standard for Hexachlorophene, dated November 14, 1958.

### Dr. Langer Develops Metal Package for Evyan

A complete metal package to house the new fragrance, Great Lady, was perfected after a year and a half of research and experimentation by Dr. Walter Langer, technical director of Parfums Evyan, Inc.



Dr. Walter Langer

The all brass package has breakaway sides hinged on a solid base and holds the perfume bottle in a shockproof position by means of a clamp form built into the base. Dr. Langer, prior to the formation of Evyan, was associated with the American Metal Co.

**Whittaker, Clark & Daniels  
Move New York Office**



Clarence E. Clark

Clarence E. Clark, president of Whittaker, Clark & Daniels, Inc., has recently announced the relocation of the company's New York office at 100 Church St., New York City, effective December 15. The move provides for modern office facilities in the new Church St. building and will enable the company to offer improved customer service.

**Florasynth Executives  
Visit European Affiliates**



Julien Bellot



Joseph H. Fein

Julien Bellot, director of research of the Perfume Division of Florasynth Laboratories, Inc., has returned from Europe where for over three months he visited his many business associates and friends. In Grasse, Mr. Bellot and Joseph H. Fein, treasurer of Florasynth, examined the new developments of Schmoller & Bompard, producers of Flower Absolutes, who are represented in the U.S. by Florasynth.

**ELMER H. BOBST ADDRESSES S.P.I.**



Elmer H. Bobst, who has made a brilliant career in the Pharmaceutical industry, from drug store clerk to Chairman on the Board of Warner-Lambert Pharmaceutical Co., spoke to the Society of Pharmacists in Industry of his past struggles and offered a prescription for success from his own experience. Above, l to r, Maurice L. Rosenthal, Vincent J. DeFeo, Walter G. Fredell, Paul A. Pumpani, Elmer H. Bobst, Gerald Siegel and Harris B. Bernstein.

**College of Pharmacy Inaugurates  
Industry Participation Program**

Inauguration of a cooperative program in which scientists from industry participate in graduate student instruction at the Philadelphia College of Pharmacy and Science has been announced by Dr. Ivor Griffith, president of the college.

**H. C. Van Arsdale Elected  
Wholesale Druggist's President**

H. C. Arsdale, executive vice president of Smith Kline & French Inc., has been elected president of the National Wholesale Druggists Assn.

**Dr. Erwin Di Cyan Now President  
of Consulting Association**

Dr. Erwin Di Cyan was elected president of the Association of Consulting Chemists & Chemical Engineers at its recent annual meeting. This is the national association of consultants. Dr. Di Cyan is director of DiCyan & Brown, the New York firm of consulting chemists.

**Kolmar to Expand Production  
in Peru and Nearby Countries**

Kolmar Laboratories Inc., Milwaukee Wisc. is negotiating with Laboratorios Leonard, S. A. of Lima, Peru in order to make Kolmar products available in Peru and surrounding countries.

**Chemical and Allied Industries  
Election Results Announced**

At the November 24 meeting of the Chemical and Allied Industries Assn. of Michigan the results of the recent election of officers for 1959 were announced. They are:

President—Dan Bradley, Shell Chemical Co.

Vice Pres.—Russell Haefer, Dow Chemical Co.

Secretary—Milford Polley, Mallard, Inc.

Treasurer—Wm. F. Harlton, Detroit Veterinary Supply Co.

John Lonsberg, Robert Warmbold and Wayne Luff were elected to the Executive Committee.

The group held its 26th Annual Christmas Party and Ladies Night on December 13.

**DCAT HOLDS FIRST ALUMNI DINNER**



Pictured planning the program for the first Alumni Dinner of the Drug, Chemical & Allied Trades Section of the New York Board of Trade, left to right, William J. Quinn, William W. Huisking, Helen L. Booth, Sydney N. Stokes, Ralph A. Clark and James Day.



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## Coutin Associates Now Represent H. Reynaud & Fils of France

Coutin Associates, New York City, of which Pierre J. Coutin is the founder and active head, have recently been appointed exclusive representatives in the United States and Canada for H. Reynaud & Fils, Monbrun les Bains, France. H. Reynaud & Fils was founded in 1898 and is one of the foremost producers of lavender and lavandin oils.

The accompanying photographs show scenes of the company's office building and laboratories and also of the cultivation of their products in the field. Monbrun is between Grenoble and Marseille but closer to the latter in the heart of the lavender, lavandin and mint producing region.

Since establishing Coutin Associates Mr. Coutin reports gratifying progress. He is well known throughout the essential oil and aromatic chemical industries which he served for over a quarter of a century with one of the leading French firms before assuming the presidency of Ph. Chaleyer Inc. from which he resigned a few months ago to establish his own company.



Offices and Laboratories of H. Reynaud & Fils



Modern methods of cultivation in the field



Preparing a batch for distillation

### Consumers Follow Their Noses in Selecting Bath Additives

In the selection and purchase of certain bath additives—bath oil, bath salts, and bubble bath—there is strong evidence that consumers literally follow their noses. This and other information on consumer habits related to products used in bath water may be found in a "Consumer Survey on Bath Oil, Bath Salts and Bubble Bath" conducted by the Home Makers Guild of America for the Toiletry and Cosmetics Division of Owens-Illinois Glass Co. The study is a part of a continuing effort on the part of Owens-Illinois to develop material helpful to the toiletry and cosmetic industry.

Regarding the reasons why bath additives are purchased, fragrance has almost universal appeal. It is strongest as a factor in the purchase of bath salts and weakest in bath oil, where the effect on dry skin is the most important influence. A strong consideration in the selection of both

bath salts and bubble bath, second only to fragrance, is the use of these products as water softeners.

Pine fragrance is most frequently purchased by users of bath oil, while Apple Blossom is second and Carnation a poor third. The leading fragrance in bath salts is Apple Blossom, with Pine and Carnation in second and third places. Apple Blossom is also the preferred fragrance in bubble bath. Pine and Carnation are second and third.

More families have had experience with bubble bath than either of the other two bath additives. Some family member in 82.7 per cent of the homes used bubble bath sometime in the past, 70.7 per cent had used bath salts, and 47 per cent had used bath oil.

It is not surprising that the housewife is by far the greatest user of all three bath products. More than 9 out of 10 use both bath oil and bath salts, while nearly three-fourths use bubble bath. What is somewhat surprising is the fact that

daughters under 19 years of age are a greater factor in the use of these products than either the husbands, sons or daughters over 19.

More husbands like bath oil than either of the other products, while more sons like bubble bath. Among daughters under 19, bubble bath is also the preferred product.

Slightly more than one-fifth of the users of bath oil say they use it "in every bath," while 14.6 per cent of the bath salts users and 14.7 per cent of the bubble bath users say they use these two products in every bath.

While there is an extremely high rate of experience with all three types of bath additives among housewives, the reported low use "in every bath" indicates that the frequency of use could be greatly improved. An interesting sidelight, developed during the course of the study, is the fact that bath additives are apparently important as gift items among a substantial group of women.



E. R. Durrer and Andre Givaudan enjoy a chat with G. B. Livesay of Colgate Palmolive.\*



Part of the large crowd at the Givaudan reception.

#### Over 300 Attend Reception to Andre Givaudan

Over 300 prominent members of the cosmetic, soap, perfume, flavor and allied industries in the United States attended the annual Autumn reception and cocktail party tendered by Givaudan-Delawanna Inc. at the Uni-

sity Club, New York City, November 6. The reception was held on the occasion of the visit to the United States of Andre Givaudan of Geneva, Switzerland. Mr. Givaudan has a host of acquaintances in the United States and the occasion afforded them an opportunity to greet a respected old friend.

#### Germaine Monteil In New Offices

As of December 8, the new home of Germaine Monteil Cosmetiques Corp. is at 730 Fifth Avenue, New York 19.

#### Croda Inc. Forms New Subsidiary

In order to improve service and increase its facilities, Croda Ltd., has purchased the lanolin and wool grease division of Hummel Chemical Co. Inc., New York, N. Y. This division will now be known as the Hummel Lanolin Corp. and has become a wholly-owned subsidiary of Croda Inc. This new operation has been relocated in a new site at 185 Foundry St., Newark, N. J., where a modern lanolin manufacturing plant has been installed for the production of USP lanolin, lanolin derivatives and wool grease products.

#### Grace Gilbert Forms Packaging Consultation Service

Grace Gilbert, formerly a packaging specialist and manager of special projects for Revlon, Inc., announces the establishment of a packaging consultation service



Grace Gilbert

under her own name. Miss Gilbert's headquarters will be located at 1135 Pelham Parkway, New York 69. Prior to her association with Revlon, Miss Gilbert supervised the packaging of cosmetics and jewelry for Hattie Carnegie from 1947 to 1951. She plans to offer her services to other industries besides the cosmetic field.

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### Ungerer Issues New Product Reference List

Ungerer & Co., Inc., announces publication of a new reference list covering products which they sell. This catalogue, completely different from previous lists, features a new cover design, showing Ungerer's seal. In addition to a complete line of essential oils and aromatic chemicals, this list features Ungerer-Vidal Charvet, perfume specialties and a wide range of flavors, with usage tables.

### British SCC Holds Aerosol Symposium

A landmark for the Society of Cosmetic Chemists of Great Britain was made October 14 when an Aerosol Symposium was held at the Royal Society of Arts. The subject was approached from three angles: Method for Recording Aerosol Spray Patterns, by K. Dixon; Compressed bases as Propellants for Cosmetic Products, by A. Herzka; Perfumes in Pressurized Products, by J. Pickthall.

In aerosol formulation it is desirable that the spray pattern for each experiment should be recorded. It is true that some subjective record of the type of performance may be obtained visibly but a permanent record is desirable. This is achieved, as Mr. Dixon demonstrated, by coating a glass plate with magnesium oxide by burning magnesium under it. The plate is then opaque and the coating is sufficiently soft so that when the plate is sprayed and then viewed against a strong light a pattern of holes is seen which corresponds to the position and size of individual droplets.

In turn Mr. Herzka emphasized the increasing use of compressed gases as propellants in pressurized packs particularly in the U.S.A.

In such packs, continued Mr. Herzka, it is possible to disperse cosmetic and other viscous products in a non-aerated form. It is applicable to shampoo, creams and tooth paste. Suitable dispensing valves are essential and it must be remembered that the pressure within the dispenser drops progressively as the product is dispensed. Formulation for these packs must be careful and stringent quality control is essential at the filling stage if the product is to be successful.

Mr. Pickthall reviewed the effects of blending and aging on alcoholic perfumes and indicated that the ultimate aim of the perfumer was to harmonize many separate odors into one blend and that this was achieved by making use of the physical attraction which some molecules have for other molecules.

### Morris J. Root Cites Aerosol Surfactant Increases

Aerosol industry use of surface active agents will increase considerably with the recent advent of nitrogen as a propellant for pressure-packaged products.

This was reported by Morris J. Root, technical director of G. Barr and Co., in a paper delivered before members of the American Oil Chemists Society, October 22 in Chicago.

Mr. Root explained that the use of nitrogen in pressure packaging has made

it possible "to expand vastly" the numbers of products suitable for aerosol dispensing. Many of the newcomer products, such as tooth paste, hand lotions, hair dressings and vitamins, require surface active agents for various purposes. There were few applications for surface active agents in aerosol products propelled by liquified gases. Many nitrogen-propelled products require the surface active agents for detergency, emulsification, wetting, conditioning and dispersing, Mr. Root said.

He also reported that products including surface active agents must be formulated for pressure with careful consideration to corrosion. He presented data on corrosion characteristics of anionic, cationic, non-ionic and amphoteric surface agents with the two types of propellant, gas and liquified gas.

### Soap and Detergent Sales Set Highest Dollar Figure

Sales of soaps and synthetic detergents, for the first nine months of 1958, totalled 3,091,637,000 pounds valued at \$786,966,000, according to reports submitted by sixty-eight manufacturers to the Assn. of American Soap & Glycerine Producers, Inc. Tonnage sales were 1.7% under the first nine months of 1957, which were the highest for the period in the history of the Assn. Sales Census. Dollarwise, sales increased 3.4% over the same

period of 1957. This is the highest dollar sales figure ever recorded in the nine month period.

Sales of synthetic detergents, accounting for 72.8% of the total market, amounted to 2,251,510,000 pounds valued at \$554,977,000, up 1.2% over 1957 in tonnage and 6.9% in dollar value. Sales of liquid detergents, showing a continuing growth in popularity, totalled 329,584,000 pounds, an increase of 29.1% over the first nine months of 1957. Dollar sales of liquid synthetic detergents were up 31.2%.

Soap sales for the first nine months of this year amounted to 840,127,000 pounds, off 8.7% from the corresponding period of 1957. Dollar sales totalled \$231,989,000, down 4.1% from the first nine months of 1957.

### Ritchie, Inc. to Market Brylcreem in New Package

After extensive field-testing and research indicating broad consumer acceptance, Harold F. Ritchie, Inc. announces that it will begin to market Brylcreem about January 2 in a colorful new tube, jar and carton. The tube, jar and carton will carry a red pennant on a field of white, with the name in large letters over the pennant. A silver crest incorporating the letter "B" has been added to strengthen product identification.

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### Dr. Oliver L. Marton Lectures on European Perfumes to A.S.P.

An interesting illustrated lecture on the perfume industry in seven European countries visited by Dr. Oliver L. Marton, vice president of the American Society of Perfumers and chief perfumer for Shulton Inc. was given at the November meeting of the American Society of Perfumers by Dr. Marton. A large and attentive audience enjoyed the lecture illustrated with photographs taken by Dr. Marton during a seven weeks European trip last Summer.

Dr. Marton, who speaks several languages, has travelled extensively and lived in five of the European countries he visited last Summer, and so was able to speak with a background which enabled him to draw contrasts between the different countries which were interesting and significant. Thus he contrasted the seriousness of the English with the French light art of living and enjoying life as much as possible. Paris, he pointed out, is almost synonymous with perfume and so is every French city or town, even the smallest mountain villages, where a whole store is stocked only with perfume and toiletries. Sometimes stores of the same kind are found in the larger cities of Belgium, Switzerland, Portugal, Spain and Holland. The reason one finds so few stores of that type in the United States he believes is because of the more sentimental, more dreamy, more ideal beauty appreciation European masses

find in beautifying or spirit lifting items such as perfumes and toiletries more alluring and more within their budgets. In America the more prosperous masses concentrate on acquiring practical luxuries such as automobiles, television sets and labor saving appliances.

To illustrate the important place perfumes occupy in France Dr. Marton listed all perfumes on display in a row of several dozens of ornamental showcases at the Orly airport which he compiled during a waiting period of ten hours. It was found that two dozen manufacturers displayed 49 well known brands of perfume in that airport alone.

In Portugal he was impressed with the people's love for colors and flowers. In that country, where lavender grows wild, he found the best type of lavender fragrance and the highest number of amateur perfumers who simply soak lavender flowers in alcohol with no compounding, no fixation, no rounding out, no synthetics and no lifting agents. A most delightful true lavender cologne results, and an 8-ounce bottle of it sells for about 85 cents in American currency. Lavender oil is not distilled as such.

Spain is a land of contrasts; Madrid is modern; Toledo is medieval. Spain is poor from the standpoint of civilization and the standard of living yet rich in tradition and past culture. As to perfume, famous brands are imported but are almost beyond the reach of anybody not lucky enough to belong to the upper 10,000; yet they are offered for sale ex-

tensively. Several domestic toiletries and soap companies monopolize the Spanish toiletries market of the middle classes. The highly perfumed toilet soap is also used as perfume sachet in the lingerie drawer or clothes closet.

While in southern France Dr. Marton visited Grasse and briefly discussed clary sage, broom, jasmin and lavender crops. The lavender crop is plentiful and the rumors of damage by caterpillars proved to be unfounded. He then visited Italy, Switzerland and Holland. In Holland practically all known brands of perfume are offered for sale in fashionable perfume stores. One well known domestic firm, Boldot of Amsterdam, manufactures cosmetics with a number of fragrances based on Dutch hyacinth, narcissus and tulip odors or bouquets made from them, such as Hollandsche Bloemen Eau de Cologne. A bottle of the cologne is passed around free to passengers on KLM planes flying overseas.

### OBITUARY

#### Irving McKesson

Irving McKesson, retired, who was president of the New York Quinine & Chemical Co. prior to its sale in 1947, died in New York November 11 at the age of 86 years. With his brother Donald he purchased the company in 1925 after both had sold their interest in McKesson & Robbins.

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**EVENTUALLY—For better creams, with economy**

B-W Lanolin the superior quality puts into your cream that which gives the skin that smooth soft velvety feeling.

B-W Lanolin will never cause your cream to darken, is best by test and contains over 15% free and combined Cholesterol.

No other base used in your cream, equals the merits of B-W Lanolin.

**B-W HYDROPHIL (Absorption Base) Made in U.S.A.**

### BOPF-WHITTAM CORPORATION

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solutions

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## SPOTLIGHT

News...

**Companies which switched to fibre cans or tubes** experienced an average sales increase of 32% following the change according to a survey by the Better Packaging Advisory Council, New York City. The survey covered a five year period. The chief reason assigned for the change was lower cost.

**Trim**, a soft drink, has been launched by Trim, Inc. a new company in New Orleans, La. of which James L. Leslie is president.

**A trademark infringement suit** has been brought by American Home Products Corp., New York City, against the Mentholatum Co., Buffalo, N. Y. The complaint charges that Mentholatum's labeling of a liniment violates the American Home Products trademark for a liniment identified as Heet with flames arising from the top of the letters.

**A hair dressing manufacturer and a comb manufacturer** have begun a tie-in promotion campaign for both. Duon Inc., Coral Gables, Fla. which makes Hair Control hair dressing and Car-Bal Enterprises, Milwaukee, Wisc. which makes combs are offering the two products in combination for \$1.25 and \$2.98. Promotion is scheduled to begin this month.

**Reports that B. T. Babbitt Inc., New York** may buy Charles Antell Inc., Baltimore have not been confirmed. Babbitt however stated that it is having conversations with Antell and is also discussing purchase possibilities with other companies.

**Date Line, a deodorant stick** is being test marketed by the Mennen Co., Morristown, N. J. and is expected to be marketed nationally in 1959. A cologne for men in a white Christmas decanter has just been launched by the company.

**A salesman of perfume in a retail store** who sprayed a free sample on a woman was found guilty of assault with fragrance and fined \$22 according to a report in Lotions and Potions.

**Cosmetic excise taxes increased** for the quarter ended September 30, 1958 over the same quarter in 1957. In 1958 the cosmetic tax collections for the quarter were \$24,886; and in 1957 for the same quarter they were \$23,041. This would seem to indicate that the industry is pulling out of the recession in a satisfactory way.

**Problems of distribution and sales** of cosmetics through drug stores will be covered in a new series of seminars to

be undertaken by McCall's Magazine. The first session was November 17. Executives of drug stores and advertising agency executives discussed packaging, promotion display and related areas in the cosmetic-drug store field. Executives of eight key drug chains served as panel members.

**Molyneux Perfumes Inc. which re-entered the American market** last year after an absence of seven years when it ceased distribution here, is undertaking a promotional campaign to capture increased sales for its imported perfumes and toiletries. The advertising will be directed by the R. T. O'Connell Co., New York, which handled the account successfully in the past.

**The Toilet Goods Assn. 1959 convention** which is planned to be held in the Waldorf Astoria hotel, New York May 12-14 may be held in another location. The business program committee has the program for the meeting well under way and the Entertainment committee is arranging for social activities.

**Coca Cola is the most heavily advertised single product in the world.** In 1957 the Coca Cola Co. spent \$40,000,000 for advertising in 104 countries. Net profit of the company after taxes was \$30,000,000. The company has 600 plants overseas. It sells through 1,800,000 outlets in the United States.

**To prevent caking or lumping in humid weather** Colgate-Palmolive Co. has repackaged Fab, a detergent, in a gold foil moisture proof box. It also serves the same purpose if the bottom of the box becomes water soaked.

**U. S. Pharmacopeia second supplement** which will be published later this year will include the entire text of the third, fourth, fifth and sixth revision announcements.

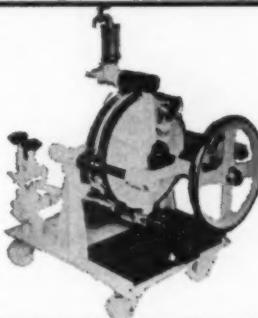
**The 1959 Directory of Department Stores** is available to members of the Toilet Goods Assn. from whom details and cost may be obtained.

**Honoring 50 years of activity of John H. Breck Inc.** the chief executives of the company were recently the guests of the Springfield (Mass.) Chamber of Commerce at a special breakfast meeting.

**Eez the spray foot powder** first of a number of proprietary items to be introduced by Chas. Pfizer & Co. through its Family Products division is being advertised nationally over network television.



### FILTERS AND BOTTLE FILLERS for the Perfumer



**MODEL EBW PORTABLE FILTER** — This filter is recommended for small capacity requirements. Accommodates from 4 to 8 12 $\frac{1}{4}$ " dia. filter disks. Easy to set-up and operate.



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**Write for Illustrated Catalog**





## PERSONALITIES

**Dr. William J. Considine** has joined the Felton Chemical Co. as research director and head of the Analytical department.



Dr. William J. Considine

ment. Dr. Considine was formerly engaged in organic research with the Sloan Kettering Institute for Cancer Research and the Squibb Institute. Dr. Considine received his Doctorate degree from Yale University and has held teaching positions at both Yale and Columbia Universities. He is a member of Sigma Xi, The American Chemical Society, Fellow of the Chemical Society (London, England), Institute of Food Technologists, and Society of Cosmetic Chemists.

**Robert M. Fenner** formerly with Vick Chemical Co. is now brand manager for Chesebrough-Ponds, Inc.

**R. E. Delaplane** has been appointed general sales manager of Metro Glass Co. Inc. Mr. Delaplane was formerly with Owens-Illinois, where he served in various sales capacities for 26 years.

**George Bausewine** has been appointed general sales manager of The Andrew Jergens Co. to succeed Frank Meeker who was recently made executive vice president. Mr. Bausewine's present position as field sales manager of Jergens has been filled by Joseph J. Engelhart, formerly west coast regional manager. Mr. Bausewine has been with the Jergens company for 12 years as salesman and divisional sales manager before becoming national field manager. Joseph J. Engelhart, his successor, has been with Jergens 22 years.

**Commissioner George P. Lerrick** of the Food & Drug Administration will be the 1958 recipient of the annual award of the Pharmaceutical Manufacturers Assn. The association has recognized "his high sense of justice and fairness in his administration of the F. D. A."

**Gerry O'Reilly** has been appointed sales manager for Bourjois, Inc. Prior to this appointment, Mr. O'Reilly was



Gerry O'Reilly

**Edward J. McClure** has been appointed director of purchasing for Crown Cork and Seal Co., Inc. Mr. McClure, a



Edward J. McClure

long time Crown employee, joined the company in 1938 as a mail clerk. He is a graduate of Loyola High School and College, and Johns Hopkins University, all of Baltimore.

**S. B. Penick Jr.**, president of S. B. Penick & Co., New York City, was chairman of the program committee of the conference of the Manufacturing Chemists Assn. in New York, November 25.

**F. Scott Matthews** has joined the household products division of Colgate-Palmolive Co. as product manager for Fab. He was formerly a soap and food account executive at Dancer-Fitzgerald-Sample.

**Mr. and Mrs. Herbert F. Storfer** have announced the birth of twin sons, born October 30, at the Lawrence Hospital, Bronxville, New York. The boys weighed in at 8 pounds and 7 pounds and are named Peter Phillips Storfer and Stephen Benson Storfer.



Jesse H. Starkman

Safety Razor Co. as a chemist, senior level. He was formerly assistant technical director of Van Dyk & Co., in charge of Cosmetic Formulation and Development.

**Dr. Hack Arroe** has been appointed by the Denver Research Institute of the University of Denver to head its Physics Division.

**Donald Dillinger**, son of Albert J. Dillinger, perfume chemist for van Ameringen-Haebler, Inc. was appointed manager of the J. P. Stevens Co., Textiles, in Seattle, Washington.

**Dr. Paul L. Day**, biochemist of the University of Arkansas School of Medicine, has been appointed to the position of Scientific Director of the Food and Drug Administration. "This position has been established to strengthen the scientific organization of the FDA," Mr. Lerrick, Commissioner of Food and Drugs, said. "The Food and Drug Administration faces new and highly complex scientific problems. Dr. Day has a distinguished record in the organization and conduct of research programs. He will be responsible for maintaining the scientific quality of our work and for coordinating all of our research efforts, both in Washington and in our field laboratories across the country."



Albert E. Eisenkraft

**Albert E. Eisenkraft** has been appointed sales manager for Fleuroma Inc., New York City. He has had extensive experience in the essential oil and fragrance field and has been with the company as a sales representative since 1951.

**Edward J. Breck**, president of John H. Breck Inc., Springfield, Mass., has been elected a director of the Springfield Fire & Marine Insurance Co.

**Eric de Kolb** package designer and promotion expert who has done notable work for Coty, Schiaparelli, Andrew Jergens Co. and others in the cosmetic field has broadened his interests in the candy industry where he has been engaged to design all new packages and promotional pieces for the Barton Candy Corp., New York.

**Patrick Abbott** head of the control laboratories and the organoleptic panel of the Colgate-Palmolive Co. in Toronto has been visiting George Fuller, chief perfumer for the Colgate-Palmolive Co., New York, N. Y.

**Joseph Colten**, controller, Felton Chemical Co. has been appointed chairman for the Essential Oil Assn. Credit Bureau effective next month.

**Harlan R. Wolfe** has been appointed to the sales staff of the Chicago office of R. D. Webb & Co. Inc., Cos Cob, Conn. He will cover the states of Michigan, Ohio, Indiana and Kentucky.

**Cyrus P. Schoen** formerly with Ayerst Laboratories and regional medical representative of Pfizer Laboratories has joined the professional division of Thomas Leeming & Co. Inc.

**Alphonse Pillet** has joined the sales organization of George Lueders & Co., New York, N. Y.

**Franklin G. Meeker**, vice president of sales of the Andrew Jergens Co., Cincinnati, Ohio has been appointed executive vice president of the company. He succeeds Joseph Nelson Sr. who has retired after 54 years of service with the company. George Bausewine has been named general sales manager. Joseph Engelhart will fill Mr. Bausewine's old job as field sales manager. All are veterans with the company.



John de Elorza

**John de Elorza**, president of Old Empire, Inc., has been elected to the Young Presidents' Organization, according to a recent announcement by the membership committee. Mr. de Elorza has designed and developed many leading cosmetic and aerosol specialties for nationally known firms. He is also a former president of the National Assn. of Private Brand Manufacturers.

**Charles R. Beall**, vice president, McKesson & Robbins Inc. spoke on "Your Customers are Talking About You" at the National Wholesale Druggists Assn. convention in Bal Harbour, Florida, November 8-13. The talk was based on a survey made by the association this year and it was reported that 5,000 people were in attendance to hear the revealing message.



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**R. D. WEBB & CO., INC.**

Distillers of essential oils of outstanding quality.  
Exclusive American agents for genuine

**MYSORE  
SANDALWOOD OIL**



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Nail Enamel—CN base  
Eye Make-up—CO base  
Lipstick —CO base



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Plants: Maine—New Jersey—Canada

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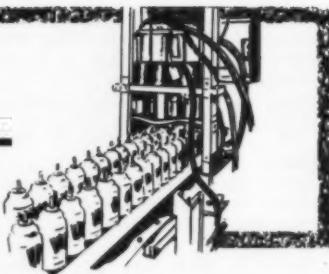
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(Continued from Page 27)

Aerosol Insecticides." I was, unfortunately, unable to attend this talk and can therefore make no comments at this moment. Further, Dr. Mitchell intends publishing, probably in the "Manufacturing Chemist" at a later date. However, knowing Dr. Mitchell, I am sure that the subject matter will have been of the highest standard and I would feel pretty sure that he left the audience with something to think about. I am looking forward to reading this talk in full.

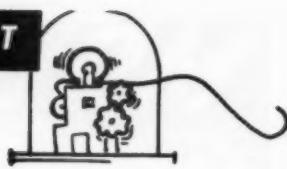
### S.C.C. Aerosol Symposium

The Society of Cosmetic Chemists of Great Britain gave over one whole evening to aerosols. In fact, they opened the season of Scientific Meetings with "An Aerosol Symposium." The Council took the rather unusual step of issuing pre-prints of the papers to be presented. This is an excellent approach and undoubtedly places the audience in a position to ask carefully considered questions. As all the papers concerned will be printed in full in the official Journal of the Society, it is only possible to make a few observations in this column.

The first paper was given by Mr. K. Dixon of Cooper, McDougall & Robertson Ltd., and was entitled "Method for Recording Aerosol Spray Patterns." This method, which depends upon the use of a soft coating of magnesium oxide on glass plate, was well demonstrated by Mr. Dixon. The opaque surface on the plate is sufficiently soft to be disrupted by small droplets of liquid. Excessive spraying is prevented by employing a shutter device. Careful handling of the resulting plates makes it possible to take photographic prints. The second lecture given by Mr. A. Herzka of The Metal Box Co. Ltd., was called "Compressed Gases as Propellants for Cosmetic Products." Mr. Herzka demonstrated just how a compressed gas such as nitrogen functioned in an aerosol pack. He discussed the advantages and disadvantages of this system. The final paper was given by your humble servant, who spoke on "Perfumes in Pressurized Products." In order to explain how two types of presentation (conventional or pressurized) might affect the odour and stability of a perfume, the essential nature of the perfume itself was discussed. Three main points were made and blending, ageing and fixation were explained. Blending itself is due to the physical attraction of molecule for molecule. Hydrogen bonding, dipole attractions and van den Waal forces should be considered. Ageing is something that occurs in the perfume with time and is the result of chemical reactions and interactions. Special reference was made to the low amounts of perfumes which are said to be required in aerosols. The differences in odour between surface sprayed and space sprayed perfumes was discussed in detail.

In America the poor people enjoy the same luxuries as the rich. The only difference is that they need more time to pay for them.—*The Item*.

## MARKET REPORT



### Seasonal Sales Gain

**S**easonal sales gains were noted in essential oils, aromatic chemicals, and closely related materials for the account of the toiletry, proprietary, and miscellaneous trades working on Christmas holiday goods. Although there has been a note of hesitancy on the part of many

buyers, the upward surge in securities, and more favorable reports concerning general business tended to brighten the outlook. Ample stocks of most oils and chemicals as well as a continued downward price trend in many items caused buyers to be rather cautious.

TRENDS IN DETAIL		
	Current	Previous
<b>Advances</b>		
Diacetyl	\$4.40	\$4.30
Oil citronella, Formosan	0.60	0.58
Copra, coast, ton	252.50	203.50
Coconut oil, coast, ton	0.19 1/4	0.15 1/8
<b>Declines</b>		
Linalyl acetate, 90-92%	\$3.00	\$3.25
Linalool	2.80	3.10
Oil pineneedle, Siberian	3.25	3.65
Oil lemongrass	0.85	0.90
Acetophenone, perfumers grd.	1.05	1.15
Iso-valerate	10.00	10.50
Benzilidine acetone	1.65	1.75
Aldehyde C-12	11.85	14.60
Cedryl acetate	1.95	2.20
Citronellyl butyrate	6.20	6.70
Geranyl		
Butyrate	4.75	5.25
Formate	4.75	5.40
Propionate	4.90	5.40
Ionone, methyl	3.40	3.75

(Prices per pound unless otherwise specified)

#### TARTARIC ACID IMPORTS GAIN—

Spain is expected to become a major supplier of tartaric acid in the future. Imports from that country are already increasing. A major domestic supplier who had formerly been selling acid of domestic manufacture announced that in the future it would offer an acid of good quality produced in Spain. Arrivals from Italy have likewise continued in reasonably good volume. The imported acid has been selling here at several cents per pound below the prices quoted on domestic material. Spain's position as a supplier of acid is the result of a \$1 million barter deal with an American pharmaceutical manufacturer.

#### CITRONELLA TURNS UPWARD—

While only moving up by cents per pound, an advance in Formosan citronella marked a complete reversal in the downward trend that has been noted in the article for more than a year. The upturn

in spot prices to 60 to 65 cents per pound was due to reports from the primary center to the effect that export offerings had been suspended. Formosa's export quota of four million pounds for this year was completed early in November, in a move to put a halt to an international price slump. No additional offerings are expected from the primary center until after the turn of the year.

#### LIME CROP THREATENED—

Heavy rains have not only damaged some of the lime plantations but distilleries have in some instances been hampered according to reports from Mexico which produces the major portion of the lime oil used in the United States. A total of 400,000 pounds or more of oil is imported from Mexico a year. There is likely to be some carry-over of oil from the last crop but this oil will probably be needed later on in the light of a smaller output from the

new crop in April-May. It is not unusual to receive unfavorable crop reports at about this time, but some trade observers believe that in the light of the area affected by the rains the coming crop may prove short.

#### HEAVY TONE IN ORANGE OIL—

Orange oil prices are likely to lose further ground in the face of an improved supply position. Most active consuming season in the soft drink trade has passed and holders of Floridian oil are becoming more anxious to move stocks. Buyer resistance continues at present prices ranging from \$1.50 to \$2 per pound. This time a year ago or before the freeze that hit the fruit belt in Florida, orange oil was selling at 50 cents a pound.

#### ROSEWOOD OIL AT NEW LOW—

Competitive conditions in the local market and continued sales pressure at primary markets brought about further losses in the prices of oil rosewood or bois de rose. The reduced prices ranging from \$1.80 to \$2.25 were at a new low level on the downward trend.

#### GOOD TONE IN GLYCERIN—

Early buying of refined glycerin for November delivery ran in sufficient volume to assure producers that the month's volume would equal and possibly exceed October sales. There has been a rise in glycerin stocks for the first time this year by 390,000 pounds, but the total stock of 58,903,000 pounds is well below the 81 million pounds on hand at the beginning of the year. Arrival of three lots of natural crude glycerin from the Argentine amounting to about 800 tons served to dampen the strong position in domestic crude. However the tight position in the crude market is failing to have the influence it once had or prior to the time when the manufacture of synthetic material got underway on a commercial scale.

#### BRUCINE REMAINS SCARCE—

Alcohol producers are still feeling the supply pinch of the denaturant, brucine, for use in formula SD 40 especially since the demand for this grade has continued to increase in the toiletry and proprietary trades. However, some relief appeared as the result of an authorization by the Alcohol & Tobacco Tax Division of the Treasury Department permitting the use of 1½ ounces of the denaturant brucine to every 100 gallons of alcohol instead of three ounces. Moreover, more quassine, a new denaturant from quassia chips, may be available after the turn of the year.

#### NEW LOTS STYRAX ARRIVE—

Two lots of Asiatic styrax gum, one from Germany and the other direct from Turkey amounting to several tons served to ease the spot supply position here. Another ray of hope in the supply outlook were reports from Turkey to the effect that another auction sale was to be held within a few weeks. Prices on Asiatic styrax ranged from \$4.25 to \$4.50 per pound.

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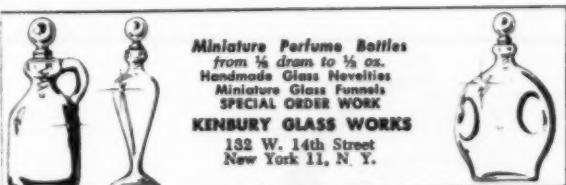
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# Index OF ADVERTISERS

Abbe Engineering Co. ....	—	Esperis, s.a. ....	76	Parento, Inc., Compagnie ....	7
Aerosol Techniques, Inc. ....	80	Esrolko, Ltd. ....	—	Parsons-Plymouth, M. W. ....	72
Alpine Aromatics, Inc. ....	—	Fairmount Chemical Co., Inc. ....	82	Peerless Tube Company ....	30
American Aromatics, Inc. ....	18	Felton Chemical Co., Inc. ....	14	Penick & Co., S. B. ....	51
American Cholesterol Products, Inc. ....	42, 44	Fifth Avenue Protective Assoc. ....	82	Perfumery Associates, Inc. ....	—
American Lanolin Corp. ....	76	Firmenich & Co. ....	—	Polak's Frutal Works ....	—
Andersen, Carl N. ....	83	Fisher Chemical Co., Inc. ....	—	Polarome Manufacturing Company, Inc. ....	79
Ansbacher-Siegel Corp. ....	—	Foilcraft Printing Corporation ....	—	Reheis Co., Inc. ....	24
Antara Chemicals, A Sales Division of General Aniline & Film Corporation ....	—	Fritzsché Brothers, Inc. .... Insert 19-22	—	Revlon Inc. ....	75
Archer-Daniels-Midland Chemical Products, Inc. ....	—	General Chemical Div., Allied Chemical Corp. ....	1	Rhodia, Inc. ....	—
Aromatic Products, Inc. ....	—	Gifford-Wood Co. ....	—	Richford Corp. ....	48
Atlas Powder Company ....	—	Givaudan-Delawanna, Inc. ....	59	Risdon Manufacturing Co., The ....	—
Avon Products ....	6	Goldschmidt Chemical Corp. ....	—	Ritter & Co., F. ....	72
Bertrand Freres ....	—	Halby Products ....	—	Rona Laboratories, Inc. ....	79
Bios Laboratories, Inc. ....	76	Hazel Atlas Glass Division, Continental Can Company ....	13	Roure-Dupont, Inc. ....	16-17
Boake, Roberts & Co., Ltd., A. ....	—	Heine & Company ....	—	Schimmel & Co., Inc. ....	12
Bopl-Whittam Corp. ....	—	Heyden-Newport Chemical Corp. ....	—	Scovill Mfg. Co. ....	—
Builders Sheet Metal Works ....	—	Hoffman-LaRoche, Inc. .... Insert 67-68	—	Shulton, Inc. ....	—
Cameo Die & Label Co. ....	82	Ising Corporation, C.E. ....	82	Snell, Foster Do. ....	83
Camilli, Albert & LaLoue, Inc. ....	84	Katz & Co., Dr. Alexander, Div. of F. Ritter & Co. ....	72	Sonneborn Sons, Inc., L. ....	—
Carr-Lowrey Glass Co. ....	—	Kenbury Glass Works ....	83	Stepan Chemical Co. ....	—
Cavalla, Inc. A. ....	82	Kessler Chemical Co., Inc. ....	—	Sun-Lac, Inc. ....	—
Charabot & Co., Inc. ....	—	Knapp Products, Inc. ....	—	Synfleur Scientific Labs, Inc. ....	5
Chauvet & Co., Pierre ....	79	Kohnstamm & Company, Inc. ....	25	Thomasson of Pa., Inc. ....	80
Chiris Co., Antoine ....	—	Lambert Engraving Company ....	—	Tombarel Products Corp. ....	—
Citrus & Allied Essential Oils Co. ....	—	Lanatex Products, Inc., The ....	—	Ungerer & Co. .... Inside Front Cover	—
Classified Advertisements ....	83	Lanitis Bros., Ltd. ....	26	Universal Outlet ....	82
Continental Can Company, Hazel Atlas Glass Division ....	13	Lautier Fils, Inc. ....	4	Van Amerigen-Haebler, Inc. ....	—
Continental Filling Corp. ....	23, 80	Leberco Laboratories ....	83	Vanderbilt Co., R. T. ....	—
Croda, Inc. ....	—	Leeben Color & Chemical Co. ....	74	Inside Back Cover	—
DeLaire, Inc. ....	—	Leonhard Wax Co., T. ....	2	Van Dyk Company, Inc. .... Back Cover	—
Descollonges, Inc. ....	—	Lueders & Co., George ....	—	Verley & Company, Albert ....	—
Deutsche Hydrierwerke, G.m.b.H. ....	—	Martinat, Jean Jacques, Dr. ....	83	Verona Aromatics, A Division of	—
Distillation Products, Industries, Div. of Eastman Kodak ....	—	Maryland Glass Corp. ....	55	Verona-Pharma Chemical Corp. ....	11
Dodge & Olcott, Inc. ....	8	Old Empire, Inc. ....	—	Webb & Co., Inc., R. D. ....	79
Dragoco, Inc. ....	65	Owens-Illinois Glass Co. ....	28-29	White Metal Manufacturers Company ....	47
Emulsol Chemical Corporation ....	—			Whittaker, Clark & Daniels ....	—
Ertel Engineering Corp. ....	77			Will & Baumer Candle Co., Inc. ....	72
				Wilson-Martin, Div. of Wilson & Co., Inc. ....	—



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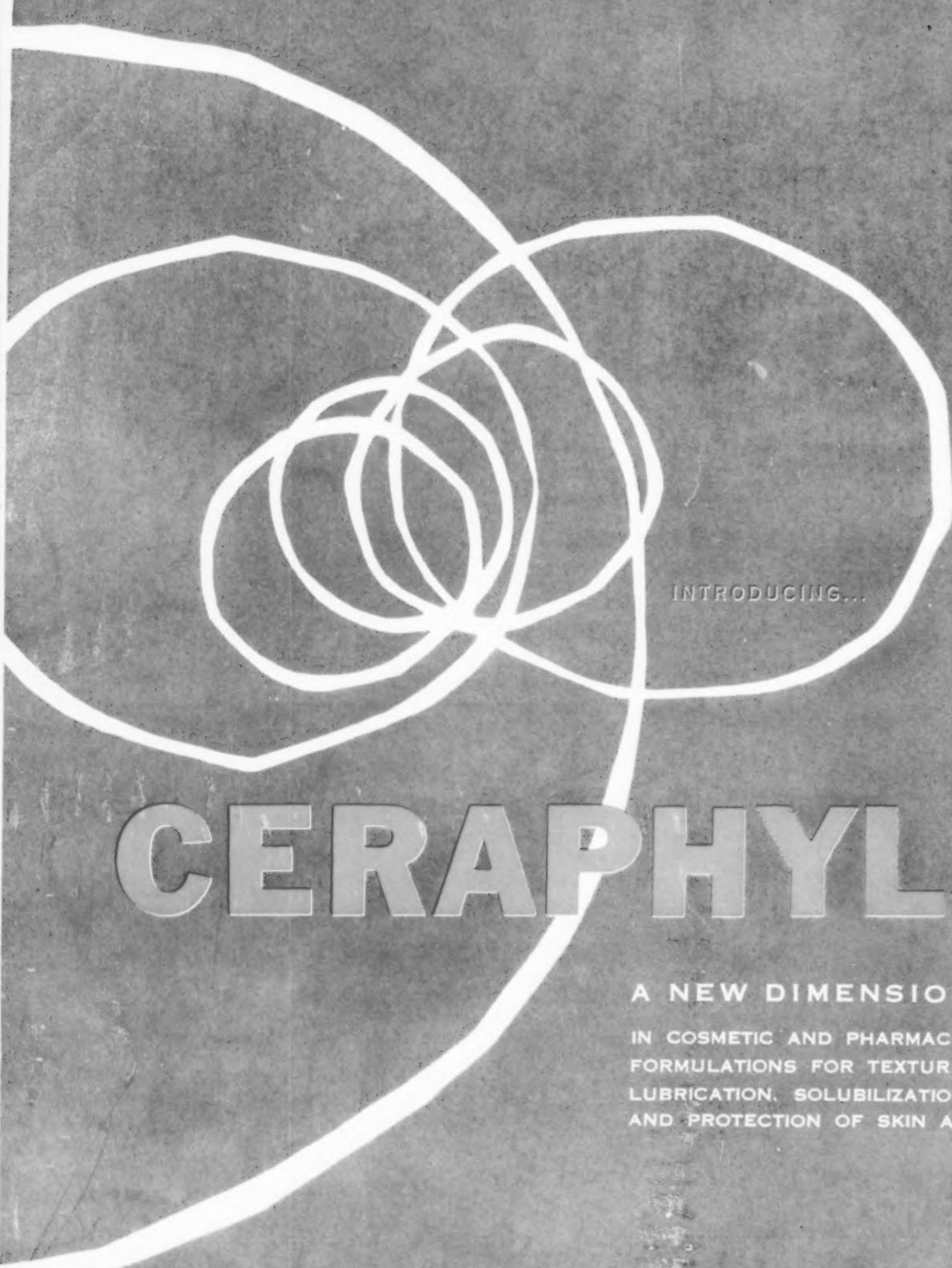
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